

Aviation News

McGraw-Hill Publishing Company, Inc.

AUG. 20, 1945

Aviation Outlook As War Ends

AIRCRAFT PRODUCTION

The aircraft manufacturing industry next year will have a dollar value production of around \$1,300,000,000 in military craft, plus from \$200,000,000 to \$270,000,000 in civilian planes, according to best available estimates at the moment, an output which will require between 250,000 to 300,000 workers.

Estimates made by aviation industry leaders vary to some degree and figures depend upon how quickly reconversion programs can be put into effect and also upon new orders for transports and private planes.

It is apparent that the aircraft manufacturing industry, which ballooned to the largest in the world, will remain a big industry, much larger than pre-war days despite the Army cutback of 94 percent for next year and a Navy cutback of approximately 90 percent.

The basic aircraft industry employed 48,638 workers in 1939. At the peak, in November, 1943, including sub-contractors there were 2,102,000 workers in the industry. Most recent count put the total earlier this year at 1,464,000. At the peak 36.9 percent of the total were women. There were almost 450,000 women working in aircraft plants at one time. Latest surveys put this figure at 316,000.

Problems involved in the reconversion of the industry to peace-time operations are perhaps best pointed up in production volume. In 1939, the industry produced 5,865 units with a total dollar value of \$279,496,000.

In 1944, the industry produced 96,369 units with a total dollar value of \$16,745,000,000. No estimates are yet available on dollar value thus far this year, but unit output up to the Jap surrender was 43,228.

In 1939, the aircraft manufacturing industry had \$114,000,000 worth of plants. The expansion carried this, at peak, to \$3,792,000,000. Looking at the picture from another angle, in 1938 there were nine airplane plants, four engine plants and two propeller plants. At peak, the total was 59 airplane plants, 20 engine plants and 7 propeller plants for a total of 86. Thirteen of these were withdrawn at the end of last year.

The industry utilized 9,455,000 square feet of floor space in January 1939. At the peak in December of 1943 the industry was utilizing 175,005,000 square feet, a figure which later decreased to 167,000,000 at the end of 1944.

Despite a shrinkage of around 90 percent as a result of the end of the war, industry executives say that it does not mean 90 percent of the floor space will be idle and place estimates at closer to 70 percent.

A large portion of post V-J Day military aircraft expenditures will be accounted for by the government's policy to "carry on continuously" its basic aircraft research program, according to WPB Chairman J. A. Krug.

The military aircraft program geared to a quarterly rate of \$2,700,000,000, prior to V-J Day, is to be cut back to a quarterly rate of \$400,000,000 by September.

PRIVATE FLYING

VJ-Day, to the East Coast private flyer meant freedom from wartime flight restrictions, all of which have been lifted. Only remaining bar to flying where and when the pilot desires is a tenuous request from the Interdepartmental Air Traffic Control Board to avoid military installations whenever possible.

For the West Coast, however, Washington officials could make no accurate predictions. Flight restrictions are continuing, they said, while coast military men and CAA representatives tackle the two great hurdles to lifting civil flight bans: great flow of air traffic to and from the Pacific and the vast array of military air equipment now clogging almost all available airport space in the area. At the moment, it is declared in Washington, there is no way to know whether official West Coast feeling will swing toward relaxation or tightening of the rules. This week, though, is expected to bring clarification.

As for lightplane manufacturing, the end of the war was more of a milestone than a new era; most builders had already begun actual production planning. The peace meant, mainly, it is up to the individual manufacturer to obtain components and materials now that war assignments are cleaned from the slate.

TRANSPORT

With demobilization due to replace redeployment, the signs point to even greater airline participation in organized troop movement in the months to come than was at first anticipated. Considerable West-East travel is expected, and the Army may call on more air carriers than those slated to share redeployment contracts, although the additional operation probably will be handled not by contract but on regular commercial air services through revamping of the priorities system, in which changes, to this end, already are under consideration.

End of the war will ease the equipment situation materially, but to what extent could not be ascertained immediately. A block of approximately 100 DC-3 type Army planes (C-53's and C-49's) will become available right away, and probably will be absorbed by the airlines on a lease rather than a purchase basis, at least until there is a clearer indication of when new planes may be had. There is some question whether the carriers will buy new C-117's, the ATC passenger version of the DC-3, in any large quantity, though these two probably will be offered. One manufacturer, meanwhile, sees a good chance that four-engine equipment can be delivered to the commercial lines in 90 days.

LESS WEIGHT PER PLANE

...when MICARTA replaces bronze



Micarta bearing is shown being slipped onto landing gear strut. Below the strut are two bronze bearings which are replaced by Micarta.

Cut from stock Micarta tubing, a tolerance of 0.002 inch is maintained. Bearings are 4 inches inside diameter by 1/2 inches long, with 1/4-inch wall.



OTHER USES IN AVIATION

INTRICATE FORM SHAPES of Micarta show possibilities of complex molding... are strong, durable, light in weight.

FRAGILE, LIGHTWEIGHT CHAIRS of Micarta are easily formed to guide 30-caliber shells accurately into the gun.

ANTHRA WAFES of Micarta jutting out into the slip-stream of piston ships... stand firm at speeds approaching that of sound.



Airplane landing strut bearings made of bronze were too heavy—even after machining grooves in them to effect weight reduction. Now that strut bearings are made of MICARTA—weight is cut 50%—production time is saved, and lubricating attention reduced to a minimum.

MICARTA is saving many new jobs because of its rare combination of physical properties. MICARTA is light in weight—lighter than aluminum—MICARTA absorbs vibrations and "bushes" repeated shocks. MICARTA resists cold, heat and moisture. In bearing applications, MICARTA wears more evenly, more slowly than metal. MICARTA "wets" better—reducing lubricating costs.

If you need these qualities, write for your copy of the new Micarta Data Book D-3184-A where they are explained in detail. Write to Westinghouse Electric Corporation, P. O. Box 666, Pittsburgh 30, Pa.

THE AVIATION NEWS

Washington Observer

WAR'S END—The recession of the aircraft industry to the production slacks which followed the end of the war was, as reflected in Washington, generally good. Nobody was alarmed or upset and most consider the production was a fair one. It is an asset in Washington that the surrender of the Japs caught a good many government people with their programs down. So far as the aircraft industry was concerned, it has been spending on reduced schedules—with some exceptions—but, even so, the end of the war was not expected by the most optimistic until at least the end of the year.

TRADE ASSOCIATIONS—Both the Aircraft Industries Association and the National Aircraft War Production Council took the end of the war in stride. Both had previously prepared plans of operation which already have become effective in part. The council's functions have ceased and it is in the process of liquidation while the AIA has begun to tackle the tremendous task of reconversion.

ARMY-NAVY JOINT PROJECTS—Although liquidation of the services continues a remote possibility, look for continued and expanded joint divisions. One in the offing is highly important to industry—the Army Industrial College will become the Army-Navy Industrial College sometime soon, and will contain a highly developed industrial rehabilitation program. This program will go far beyond post-1939 planning and preparation, and joint planning will preclude competition in the services for industrial output.

*

COMBINED OPERATIONS—Few people in the country realize that joint amphibious exercises were started only a short time before this country entered the war. They were organized off the Carolina coast and were directed by Marine Corps General H. M. "Howling Mad" Smith, who later led invasion operations in the Pacific. There undoubtedly will be a joint operations staff organization and expanded treatment of this type, another point at which the services will be brought closer together.

*

"PRODUCERS" PROTECTED—Note that cut-backs were handled in such a way that "traditional" plane producers for both Army and Navy were protected from going out of business entirely. Grumman, Ryan and Martin are noteworthy on the Navy side, while Bell, Boeing, and Fairchild good Army examples.

SURPLUS PLANT DISPOSAL—Surplus Property Board's report to Congress on policies for disposal of government-owned aircraft plants is being rushed for examination to the legislators when they convene in September. Originally, it would have gone to the full in October. SPD is seeking industry recommendations to be incorporated in the report. Multiple tenancy still appears to be the most logical solution, although the services may oppose this because of the industrial distractions which might arise in time of emergency. Another factor is the time which would be required to clear plants for war production. The services will want some plants held for at least five years on a full standby status.

GERMAN AIRCRAFT REPAIR—Details on German aircraft will be made public soon, probably this week, when the Army Air Forces will release a 125-page report which has been in preparation for some months.

AIR PLANNING GROUP—An Air Planning Group is being set up in the Office of the Army-Navy Liquidation Commissioner. The group is being planned as a policy committee which will work on market surveys and establish sales policies.

AIRPORT LEASES—CAA is showing concern over the increasing number of ex-lease lands to airports being acquired by aircraft service operators. Apparently gambling on a tremendous expansion, some operators are going far afield to sign up airports on long-term, exclusive contracts. CAA fears this will further emphasize the administration of any Federal aid airport legislation, as all NLRs now being considered forbid exclusive leases on airports partially financed by Federal funds.

WEST COAST HEARING—An aviation light metals subcommittee of the Senate's Small War Investigating Committee has tentatively dated hearings, during the Congressional recess, at West Coast aircraft centers on industry conversion problems. Hearings probably will open in Seattle toward the end of August and later move down to Los Angeles. Senator Mitchell (D-Wash.) is chairman. Other members are Senators Farnell (D-Del.), Kilgore (D-W. Va.), Ferguson (D-Mich.) and Brewster (D-Me.). Group will use possibilities of using surplus aircraft facilities for aluminum fabrication.

It will be a
better product if you use
Tel-air
PRECISION PARTS

UNFAILING ACCURACY—absolutely dependable every movement—this is the total essence of today's standards and requirements in all precision manufacturing. Making this characteristic real has facilitated the work "Tel-air means accuracy" to leaders in precision production.

NOW IS THE TIME to investigate the expanded and complete facilities and the long specialized engineering experience have placed at your command. This includes today's dependability of material, and the old degree of structure and finish of long measurements are external factors of your product's success—present or post-war—make sure with Tel-air.

Bomb fuses, key timing gears, hundreds of Tel-air parts for aircraft mechanism manufacturing for the war industry, attested the exceptional reliability of Tel-air in severest service. Teleoptic Divisional Signals for the highway are made to the same standard of accuracy and dependability.



Draw your product to us by closed without any obligation on your part. They will receive immediate attention. And you have the assurance of a consistent and outstanding record for prompt delivery to schedule.

Order
Tel-air
Teleoptic
THE TELEOPTIC CO.
1501 BROAD AVENUE
RACINE, WISCONSIN
Write for
Tel-air

Aircraft Industry Adjusts To Contract Cutback Impact

Company by company reports of production changes point way to aviation output emerging as one of nation's largest peace projects.

By SCOTT HERSHEY

Full effect of the cascade of contract cancellations and cutbacks which flooded the aircraft industry has not yet been fully determined, but despite heavy cuts in personnel and sharp slashes in production, the industry will emerge at one of the largest in the country.

The overall Army Air Forces program will be reduced by approximately \$4,990,000,000. Included in this reduction are more than 31,000 airplanes.

Weight Tied—Cutbacks in airplanes for the remainder of 1946 represent a reduction from present programs of about 30 per cent, based on airframe weight, and 94 per cent for 1947.

Slack of the airplane cutbacks, measured in terms of dollar and weight reductions, were attributable to heavy bombers. Not reductions in the number of airplanes amounted to approximately 7,600 planes. Number of fighters has been reduced about 13,500, transports by 5,500 and trainers and others by approximately 4,900.

Despite the Navy program were delayed, but the overall picture shows that there will be \$4,100,000,000 worth of undelivered Navy airplanes and supplies on Sept. 1. This figure will be reduced to \$1,150,000,000.

The Navy will permit August schedules to be completed. Some incomplete cutback details effective Sept. 1 on Navy planes, include The F4U-4, the Chance Vought plane built by Chance Vought and Goodyear, will be out at Goodyear and continue on a reduced rate at Chance Vought.

RAF, Grumman and Eastern, out Grumman's F-6F, F4F, and F4U will continue on a reduced scale. TBM is out. Curtiss Wright's SUC will taper off. Martin P4M

continue at reduced rate. Convair's P-39 will not but the P38 will continue at a reduced schedule as will the B1D, Navy's version of the standard Douglas transport.

Maintained Output—Continuing in production will be certain types of planes, most of which will represent the continuing experiment and research work in which the Army Air Forces and the aircraft industry will cooperate. These planes embody advanced principles of design and construction, and their continued production will further vitally important aviation progress and development.

They include the new models now in the experimental stage which incorporate not only the valuable experience learned during the war, but also new inventions and developments in aerodynamics, propulsion and electronics.

Report from individual manufacturers over the country, will incorporate, in many details show **The Glenn L. Martin Co.** has positive government and commercial contracts now on hand amounting to \$104,000,000 for the Baltimore plants, providing continuous operation through September, 1947. Production of Boeing B-29's at Martin's Omaha plant is out.

Boeing will drop 16,000 of its 30,000 workers and shut down the Tulsa and Oklahoma City plants. Santa Monica and El Segundo will continue to produce, producing C-47's, C-47's for the Army and a restricted bomber for the Navy in addition to commercial craft.

North American Aviation received a 15 per cent cutback in production of P-51 fighters. Experimental work now in the mill will be continued. North American's contracts at Kansas City and Dallas have been cancelled.

New AAF

Strong indication that the Army Air Forces has come out of the war with a completely new outlook on air power has been given by General of the Army H. H. Arnold.

Stressing the need for progress in research, Gen. Arnold declared a "Duck Rogers conception of war is right on the threshold." He stressed a future air war without human crew and guided by light or heat.

Open Minded—He did not know if the future air force would comprise conventional types of aircraft. He said he wasn't limited in that phase, but the AAF intends to keep up to date and is not committed to current forms of air weapons.

For the present, AAF will retain its latest types, including a super-heavy bomber larger than the B-29, with a range of approximately 3,000 miles.

Flyer, working on the Fireball, a new Navy fighter of unconventional design, will carry on through 1947 on current contracts.

Northrop Aircraft will continue to produce the P-81 Bell Witcher night fighter on a reduced scale.

Lockheed will continue production of its new jet fighter, the P-80 Shooting Star, and the P-56 Lightning. A-10's will continue to produce as the Ventura search bomber output will be restricted and probably eliminated.

Consolidated Vultee has not yet made a complete report, official transactions having been delayed on some models. Output of the Navy's PB1Y-1 Promoter will be reduced, output of the new heavy bomber probably eliminated.

Curtiss-Wright cutbacks are set complete in detail with approximately 139,000 workers affected.

Bell continues with the output of a few P-63 fighters at Niagara Falls, but will close Marietta, Ga., where B-29's were built.

Fairchild will continue to build some C-52 Puckler cargo planes, but North American's contracts for this craft are out.

Boeing Wichita will continue pro-

duction on present schedules of 180 Superfortresses a month through August and only a slight cut next month. Production of B-29's will continue at the parent Boeing plant in Seattle-Boeing, on a slightly reduced scale.

McDonnell Aircraft will continue work on B-29 development contracts and require spare requisitioned for at Clinton-Wright in St. Louis.

Republic Aviation retains experimental contracts and will operate at Farmingdale, Long Island. Cutbacks on P-47 Thunderbolt contracts will mean the closing of Republic's plant at Bensenville, Ill.

Grumman will continue production on an unannounced scale of advanced Navy fighters and also is planning complete aircraft for commercial markets.

United Aircraft is closed for a 10-day period in addition to the two-day peace holiday as a result of cutbacks at Pratt and Whitney Corp., Hartford, Standard Process and Chance Vought aircraft.

Eastern Aircraft Division of General Motors, which has been providing parts for Grumman planes, will revert to automotive assembly.

Virtually all plants are going back to a five-day week or 90-hour week to meet the changed conditions. Engineering and technical personnel are being retained

in much as possible for future development and production work. Cutbacks of some of the individual models which were scheduled for production in considerable volume include: Boeing B-29's, 5,245; Douglas A-26 Javelin, 1,124; Republic P-47 Thunderbolt, 4,245; North American P-51 Mustang, 8,419; Lockheed P-40 Fighting Star, 2,017; Douglas C-54 Skymaster, 1,549; Fairchild C-42 Packet, 781; Douglas C-47 Skytrain, 227; Curtiss C-46 Commando, 1,650.

Bayard To Leave CAA Airport Post

John B. Bayard, Jr., chief of the planning and survey section of CAA's airport service, has resigned, effective Sept. 1, to join an airport consulting firm in Detroit.

Bayard was chiefly responsible for the National Airport Plan and Congress in November, 1944. He was one of CAA's main witnesses in testimony before both House and Senate committees which considered airport legislation last Spring.

Split Possible—While informed sources declared Bayard's resignation was prompted merely by a better position offered by the Detroit concern, there are reports of

Air Jobs Open

A continuing need for technicians and semi-skilled employees in Federal service is sponsored by the United States Civil Service Commission. Most beginning salaries are \$2,400 or \$2,440 a year, plus overtime pay, although some positions are listed at higher salaries. Most positions are in Washington.

Engineering experience is required for these positions, although appropriate education may be substituted for part of the experience. Aeronautical engineers are needed by the War and Navy Departments and the National Advisory Commission for Aeronautics and the Civil Aeronautics Administration.

Categories—Types of work include design and development of new or improved types of aircraft or aircraft equipment, research, investigation, analysis of aircraft structures, and research and development of ultra high speed aircraft and jet-propelled missiles. Experience must have been in aeronautical engineering. Applicants will report to the Civil Service Commission, Washington 25, D. C.

a split in CAA over the agency's stand on the National Airport Plan. One group advocates a firm position in favor of the plan as it, while another side opposing modification. Bayard's successor has not been determined.

Harvard Airport Report Expected Late In Year

Harvard University's report on the management and financing of airports will be published by the end of this year.

Dr. Lynd L. Bollen, director of aviation research for the Harvard School of Business Administration, completed in Los Angeles, this week, the gathering of data on airport operations throughout the nation.

Objective—He said that in their airport research his staff had as the prime objective "determination of how airports can be put on a self-sustaining basis without jeopardizing the growth of aviation." The released report is expected to begin the writing of his report in November, and he believes that the result may be book-length in the volume of its subject matter.

Aircraft War Councils Ended As AIA Fills Top Peace Role

Industry representatives in Washington quickly adjust to mammoth reconversion task ahead; teamwork and confidence that built wartime air production structure seen continuing in new relation.

Congressmen in Washington representing the major aircraft manufacturers quickly adjusted their attitudes to the tremendous changes now in motion in the industry.

The National Aircraft War Production Council ceased its functions the day after the Jap surrender was announced. Subard Palmer, general manager of the council, said the organization was in a liquidation process involving a careful screening of records and reports, microfilming of permanent records, and making provision for five-year storage.

AIA Takes Over—With the council functions at an end, the Aircraft Industries Association has assumed complete representation of the industry in all of its phases.

Palmer estimated about two months would be required to complete the council dissolution. Personnel of the council has been transferred to the various agencies necessary to do the wind-up work. The regional councils, Aircraft War Production, West Coast, East Coast, and the Central Aircraft Council, which was a part of the Automotive Council War Industries, are winding up. Automobile manufacturers engaged in aircraft, all have ceased their functions.

Personnel of the councils, highly skilled men and women who know the industry thoroughly, are scattered.

Main Force—Bulk of the production problems which confronted the industry in wartime were handled by the various committees set-up by the regional councils. The National Council in Washington had no committees, but acted as liaison between the regional councils and officials in Washington, both military and civilian.

The released report is expected to begin the writing of his report in November, and he believes that the result may be book-length in the volume of its subject matter.

Eugene E. Wilson, president of the Aircraft Industries Association, which is poised for the tremendous public tasks it now confronted, stated that "employees of the aircraft industry can forever be proud of their production achievement in providing our Air Forces and those of our Allies with an overwhelming superiority of military aircraft."

Jobs—"To those workers," he added, "our member companies say that we are accelerating reconversion to peacetime production of personal plane types is already under way. Production of transport types so sorely needed in the current transportation crisis, awaits only action by the government to hasten the use of facilities."

"To the nation," Wilson said, "the industry urges the maintenance of the industry's research and development teams to insure America's continuing aerial supremacy. These teams must be kept intact if we are to meet our peace-keeping obligations stated in



Article 45 of the United Nations Charter.

"Under an adequate national air policy, our industry can guarantee that the 'air force contingent' required by that charter are adequately equipped to deal with any aggression of the future."

The Aircraft Industries Association has its peacetime program prepared and have already put parts of it into operation. General president of the industry is to continue its public relations, education and education programs so approximately the same scale as before.

Duty Links—Many industry ex-

Aircraft Council Service List

Slight indication of the vast scope of the operations of the National Aircraft War Production Council in Washington is the list of services performed for the industry by the Washington Office in the past two months. It includes such items as:

Management—Presented to Commander McNitt, and government, inter-agency committees, statistics and information presented by East and West Coast Councils for retention of the then current draft ordination system, worked with the National Bureau of Aeronautics to locate additional engineering help for a number of competing various conferences at the War and Navy Departments, with Section Service officials.

Materials—Worked with Aircraft Resources Control and Aircraft Scheduling Units conference at War Production

Board, with ARCO and Navy on aircraft advance operations.

Material Committee—Internal discussion with the committee staff for information on aircraft performance and the industry's production achievement.

Information—The National Council handled an unprecedented volume of requests for information on the industry, particularly cutbacks, for Washington newspaper correspondents, magazine writers and news bureaus, prepared replies to production inquiries from various government officials.

The list of National Council activities for one day speech covers several pages and runs into hundreds of items—all relating the problems of production which had to be solved if the industry was to meet its wartime obligations.

'Few' Jobs Seen For Vet Airmen

To the question of how many military airmen will find employment in civil aviation, the Bureau of Labor Statistics has one answer: a comparative few.

On the basis of a recent study, threatening civilian five years in the future, BLS estimates there may be 10,000 jobs with airlines and in non-aviation aviation. There are more than 3,000,000 persons registered with army plans of military aviation at the present.

Five years from now, according to BLS, military civil employment should be:

Airline pilots—10,000
Non-aviation aviation pilots—1,000
Mechanics—40,000
Navigators, flight engineers, radio operators, etc.—3,000.

Measured against these inadequate figures are 1,000 jobs for multi-engine equipment with the Army and Navy, 100,000 service pilots without multi-engine reli-

ance, 270,000 trained mechanics and specialists, 233,000 navigators, flight engineers, radio operators.

Problems seen particularly dismal for mechanics in the service. According to the War Department, 23,000 war jobs in peacetime aviation. CAA records show 24,000 mechanics already certified.

Although in five years the need for flight pilots will be three times the present number, on the basis of BLS estimates, the number is how to absorb qualified aviation men to insure a retention of interest.

Post Problem—There have been approximately 4,500 pilots with multi-engine experience from the armed forces to date. Few have been able to find employment with airlines if the big airlines have not taken over for two or three years, observers wonder if the pool of 2,000 pilots to which BLS refers will still be available.

employees who served on Aircraft Industries Association committees, also have served on council committees. The vast scope of the council's activities which were part of the wartime production covered subjects ranging from slacks for women workers, bottle milk for children at child-care centers to operations with Selective Service and helping maintain the flow of materials needed for planes.

The West Coast Council was the first organized, April 8, 1942. The East Coast Council was organized on Oct. 2 of the same year and the National Council came into being on April 13, 1943.

There has been a mutual confidence between the presidents of the aircraft companies and their council officers which paid off as the East Coast Council handled problems of eastern manufacturers, the West Coast Council the problems of the Pacific Coast manufacturers and the National Council took care of the Washington problems of both.

✓ Roles—Among the council committees which were formed to solve various problems as they arose were: auditing, engineering, industrial relations, production expediting, public relations, employee service sections, government reports, material, production statistics and manpower, recruitment, training, and conservation.

—C. S. H.

Polar Navigation Plan Wins Canadian Medal

C. Herman Noy, of the Canadian Bureau of Mines and Resources, has been awarded the Medal for Pure Science by the Professional Institute of the Civil Service of Canada for development of a new navigation method designed to aid in polar flying.

As a result of his work, polar flyers can now find their exact bearings in both water and snow—keep a check on changing compass readings and obtain a reliable weather forecast, all in a fraction of the time previously required.

✓ Compact Features—Since many small aircraft are being employed in warmer climates are used in polar regions, Noy devised a system of transparent covers, combining maps and star curves, which are as accurate as celestial equipment, but more compact.

By means of slotted templates, he cut to a minimum the amount

of information required for accurate observations for areas north of latitude 66, eliminating volumes of astronomical tables. To assist flyers in the areas where the magnetic north pole influences compass readings, reliable polar magnetic charts were prepared. Meteorological maps have been designed which show what weather conditions may be expected at any given period.

Randall Chapman Killed In Gliding Accident

Randall Chapman, chief engineer of the Laurier-Kauffman Aircraft Corp., was killed recently at St. Louis when the wing of a glider he was piloting fell apart. Mr. Chapman had been active in aviation since 1933.

John Lester, president of the company, who was among the 2,000 spectators watching a demonstration at Stirling Airport, said the glider had just been towed to about 3,000 feet and had gone through a series of loops. When Mr. Chapman put the craft into a dive at about 2,000 feet, the left wing sheared off and he lost control.

New Managers

Managers of both the East and West Coast operations of the Aircraft Industries Association have resigned and their successors have been named.

✓ James Straight, West Coast regional manager, will be succeeded by John K. Boyle, who has been director of readjustment service for the Aircraft Industries Association in Washington. Formerly coordinator of committees for Aircraft War Production Council, Inc., Straight was appointed to the post from which he has just resigned when the Association's Chamber of Commerce, now AIA, was re-evaluated about a year ago.

✓ Sam Ellington, manager of the Aircraft Manufacturers Council in New York, representing eastern regional members of AIA, will be succeeded by Louis Carl Phillip Hurstman, chief labor and personnel branch, resources division, assistant chief of air staff material and services. Prior to joining the Army, Hurstman was assistant general manager of a manufacturing firm in Natick, Mass.

Republic Incentive Bonus Is Approved

A modification of Republic Aviation Corp.'s incentive bonus plan, to make an adjustment for a great increase in time spent on experimental work, has been approved by the War Labor Board.

Under its plan, Republic has been basing each employee's bonus on total hours and total production. With a switch to heavy experimental development, many working hours have had no relation to production. Consequently, the company some time ago stopped payment of the bonus pending a clarification.

✓ New Basis—Under the new scheme, the bonus is calculated on the basis of time put in by workers on production only, the hours of those on experimental tasks being excluded. Experimental workers, however, will continue to share in the bonus.

WLB approval has been given for a trial period of six months. At the expiration, Republic must present an alternative unless it has previously advised WLB that experimental hours will be radically reduced.

Although the Republic plan is an innovation in incentive bonuses, aircraft industry observers attach little significance to it. They point out that only two other plants have incentive payment plans—Boeing and Grumman. In addition, the incentive system was established merely as a ploy to spur production and when the war orders are terminated the necessity for incentive payments likewise will end.

NACA Visits Ordered For AAF 'Lessons'

Army Air Forces have decided to send about 80 air combat officers per month to visit the National Advisory Committee for Aeronautics' engine laboratory at Cleveland. Lt. Gen. Sir C. Baker, deputy commander of AAF, gave the order after NACA had put on a special demonstration for aviation writers and for Army and Navy groups.

Baker stated three reasons why he wanted officers to observe basic aeronautics research, as a part of the redeployment routine: (1) many of them have seen much German aviation development, plants and results, and got the impression that the United States



ALL IN THE DAY'S WORK

A helicopter can easily hover low enough for pilot and passengers to talk with people on the ground nearby. The Kellett XR-8 helicopter, shown above, "stood still in the air" by the hour, at only one foot above, during its test period. When all was ready, remaining cities were bombed and its cross-country flying career began.

The XR-8 can fly forward, backward or sideways. It can rise or descend vertically, permitting take-offs and landings in any space large enough for safe clearance of its own blades.

Kellett has been active in the design of many wing aircraft—helicopter and autogyro—for over 15 years. Most advanced models than the XR-8 are

on Kellett drawingboards and in Kellett workshops today.

The final word in helicopter design will not be written for some time to come. Many engineering problems must be solved before helicopters are brought into practical daily use. Progress already achieved, however, more than justifies the man hours that must still be spent by Kellett and other organizations active in this field. Their objective is to make helicopters available for carrying mail and transport jobs, in areas and under conditions where no other air, land or water craft can operate.

Kellett Aircraft Corp., Upper Darby (Philadelphia), Pennsylvania.

KELLETT

was behind in some phases; (2) many of the officers have been as busy in operations that they have learned very little about technology; (3) some of them will become leaders of the country's air power in the very near future.

Annual Air Insurance

Associated Aviation Underwriters has instituted broadened aviation accident insurance as an annual policy item. Similar in general provisions to the new coverage of United States Aviation Underwriters (Aviation News, July 30), the Associated policy costs \$1.20 per thousand dollars and furnishes protection while a passenger traveling anywhere in the world on an American-flag airline.

Field Chiefs Named For Surplus Abroad

Army-Navy Liquidation Commissioner has announced several additions to the staff. Thelma Kelley, director of the Chicago Times, Inc., has been named field commissioner for the Italy area and will have headquarters in Rome.

James M. Britton, general counsel of the Federal Reserve Bank of Philadelphia, becomes field commissioner in England. Both will be under the supervision of James Knewton, ANLC central field commissioner with headquarters in Paris.

Charles T. Laine, former special assistant to the Attorney General, has been named senior consultant to the commissioner and liaison officer with other government agencies.

Studebaker Air Engine Plant To Be Released

The Chicago plant in which the Studebaker Corp. has been building aircraft engines is being offered for sale or lease by the Reconstruction Finance Corp. with the expectation it will be available for civilian production in approximately 90 days.

The plant layout covers about 50 acres and includes a main building of steel and concrete, one story high and containing 752,885 square feet, and smaller buildings arranged which is a power plant supplying steam, refrigeration, compressed air and emergency electrical service for the entire plant.



LUXURY LIBERATOR WAS "UGLY DUCKLING"

After flying for more than five years as a rough, rugged, far-from-beautiful experimental "workhorse," the first Liberators bomber ever built, Consolidated Vultee Aircraft Corporation's XB-24, has become one of the most luxurious air transports in existence. Approaching termination of military contracts for planes of the B-24 series made Consolidated's "Grendysepp" available for a last experiment. Frank A. Leaman, Consolidated sales manager, Ross R. Rogers, director of flight service, and A. C. Buss, chief of air transportation, were competing for production of an "armored airplane." These photographs show the result, and the plane today, with wide scenic windows, leather of green leather trussed with blue, push-button conversion levers of green leather, berths, recreation bins, and amplest extravagance in the plane's cabin; is strong contrast with the XB-24 in December, 1939. Air Transport Command took over the luxury B-24 three months ago for assignment as the personal plane of General Marshall, U. S. Ambassador to Mexico.



Triple-Eyed Sky Spies

...that photograph 20,000 square miles in 3 hours

Unmanned costly territory lies 15,000 feet below. Three wide angle lens camera, two set oblique, one vertical — as shown above — click simultaneously in rapid intervals. With each synchronized click, 415 square miles of terrain are photographed from horizon-to-horizon in three hours, by flying parallel courses spaced twenty-five miles apart, these sky spies photograph 20,000 square miles.

Tri-electronic photography is the latest system yet devised for military map making by means of aerial triangulation in coded form.

Accurate map making with Fairchild Aerial Camera is based upon precision controlled photography. Mechanistic inter-connection space the photographs. Solenoids control the shutters simultaneously and Fairchild's electronic motor runs more precisely needed shutter speeds. Light activated wire trigger race lines on sensitized paper sendway at 1800 rpm. These lines control the length of time the shutter requires to completely open and completely shut. Checked against calibrated scales, these lines determine whether or not each Fairchild lens-to-the-less than perfect within professional tolerances — because shutter speeds



on a Fairchild Camera must mean exactly what they say!

Professional electronic and mechanical skill joins Fairchild Aerial Camera with the world's best professional cameras — an achievement that is being paralleled in the production of aircraft cameras, radio direction finders, best compassing gun sights and other vital aviation equipment. New York Office: 475 - 10th Avenue, New York 18, Plant: 58-04 Van Wyck Boulevard, Jamaica 1, N. Y.

Fairchild CAMERA AND INSTRUMENT CORPORATION



Secrets of Radar Revealed



Casting of a radar-equipped RAF Lancaster heavy bomber. The number of boxes shown here is a minimum. Some planes may carry 30 more.



Top diagram, a shore installation sends out beams encompassing an enemy ship. Below, result appears on radar scope, with shortest "pot" indicating ship's position.



A "Ground Controlled Intercept" station, used by the British to direct their fighters to enemy planes until close enough to rely upon their own radar devices.



An idea of the extensive radar equipment used on some planes is apparent in this view of only one part of an RAF Wellington.



Part of the British radar system used in tracking and plotting aircraft. This is a 30-ft diameter parabolic aerial.



Equipment needed for anti-aircraft defenses. Left, British gun laying radar transmitter; right, the receiver.



crimer with a pattern of cross-cross ground wires, shown in the foreground.



"When a **GIANT CARGO PLANE** outlives a Jap Zero... **THAT'S NEWS!**"



"Aimed snap with my heavy typewriter, it was aimed, over the Atlantic from London to China to get on the next wave. Every time I looked at that 37,000-foot engine, I couldn't help thinking, 'Is this the necessary?' But when they landed in Asia in Curtiss Commandos, I felt better. That engine is a great engine. I've seen Commandos carry a 48 truck engine, and boxes of Chinese troops. And they made it, through weather that even grounded the birds. But here's the guy all. One of those ancient Commandos usually carries a ship. With the ship on the deck, that ship was into a 400 mile-per-hour power drive, and back that hot fighter to a wind back in the back of time. Before me, when a giant transport plane can take a 340-speed drive like that... that's news!"



THAT'S WHY I WANT TO RIDE THE AIRLINES THAT

Fly Commando!

MOSEF JARIS
Was Commanded in the
Curtiss Commando before



There's Lots of Room in this plane for Commando... world's largest four-engine transport. More speed and delivery than is served from the big city kitchen up front by two kitchens, or is served out a house. And the top-top Dials show make a perfect, between each look



Quick and Smoothback. Before necessary for flight stop, the plane is the Curtiss Commando's own-ill speed. For instance, the crew can be moved quickly and easily in eight seconds. Look for rapid response. And it is designed so that several men can work on the engine at once without getting in each other's way.



Cargoes From the Sky. First Commando with wide wingspan in among the most powerful that a four-engine and six-engine transport, when they fly Commando! The Commando offers 528 cubic feet of cargo space for 374 tons of baggage and cargo. And in both loads, the temperature is constantly controlled to prevent freezing.

THE CURTISS

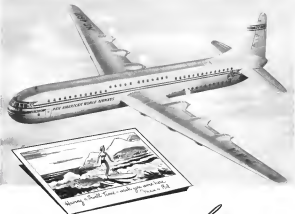
Commando

Today's Great Lifetime Tomorrow's Great Airline

CURTISS

WRIGHT

FIRST IN FLIGHT



Weekend in Honolulu? Let's go!

No feasible device on a designer's drawing board is this huge six-engine Clipper. Month ago Pan American placed an order with Consolidated Vultee for a fleet of these sky giants ... soon they will become an actuality.

204 passengers and 7 tons of mail and freight will speed non-stop across the North Atlantic to Europe. Daily service to Honolulu and Latin America is part of Pan American's sweeping postwar plan to bring distant places closer than they have ever been before.

These are the types of planes for which Chandler-Evans builds carburetors and fuel pumps. The larger planes — with engines from 500 H.P. up to the big ones needed by this new sky giant — demand the engineering precision and dependability that is built into every CECO product. As it is serving the Liberators, Superfortresses, and other big war planes today, so will Chandler-Evans supply tomorrow's greatest air liners.



**SOUTH MERIDEN
CONNECTICUT, U.S.A.**

THE AIR WAR

COMMENTARY

Airline Navigation Revolution Seen As AAF Unveils Radar

Immense possibilities of hitherto secret all-weather long-range navigation system, exact blind landing technique, possible commercial application of bombing-through-overcast system, demonstrated publicly for first time.

On the very day which brought the sensational announcement that the supersecret atomic bomb had been successfully used against Japan, the Army Air Forces were demonstrating many hitherto classified items of radar equipment to a group of newspaper correspondents, including a representative of AVIATION NEWS, at the Army Air Field, Boca Raton, Florida.

This radar equipment, as well as other more advanced devices still under wraps, was notably successful in achieving the war against Germany and, in the opinion of the highest military authorities, had an even more decisive effect in the war against Japan. **Transport Effects**—The demonstrations also clearly indicated that radar has already revolutionized aerial navigation, and that profound effects on post-war air transport operations may be expected.

From the incidental description of the development of the various devices it became evident that here was teamwork of a very high order. The team included the British and American armed forces, government agencies, such as the Office of Scientific Research and Development, research facilities, such as the Radiation Laboratory at MIT, and the Bell Telephone Laboratories, American industry, getting the bugs out of laboratory sets for full production of service equipment, including Western Telephone, RCA, Philips and hundreds of other companies, as well as the developers of special gadgets like the mercury klystron tube, the General Electric lighthouse tube, the cavity magnetron from the British, etc.

Transport—In the nature of the case, the early development of radar was carried on by the U. S.

Navy, the U. S. Army Signal Corps and the British. However, as the war progressed, the Army Air Forces introduced important tactical applications of radar, the first of which was the use of microwave sea-search equipment mounted in aircraft for an offensive campaign against the U-boats off the Atlantic coast.

Others include bombing through overcast (BTO) from high altitude by the use of "beacon" and free low altitude with special LAR (low altitude bombing) equipment; navigation in troop carrier operations, with "Bebecon-Bu-cka"; and the ground control of tactical air missions for the destruction of critical enemy targets. **Navigation**—The system as developed by General Quisenberry's IX Troop Carrier Command.

In addition to these developments, the latest use of radar, in terms of scale, in type, and in value of equipment, has been the U. S. Army Air Forces. **Secret**—Ikeon Radar on the board of the AAF radar training program has been a highly important unit in Lt. Gen. Hapner's 5th Year's AAF Training Command. Until recently the station has been strictly under wraps.

The program arranged for the presentation of the demonstration of the important functions of radar by means of equipment which has been in operational use for at least one year or more. Among the devices shown were the low altitude altimeter, which provides extreme accuracy for fighter-bomber missions on land and low altitude bombing operations; the high altitude altimeter for heavy bombers and B-29 operations; the microwave altimeter; over the horizon altimeter of showing how high the bomber is

over the terrain, and not how high above sea level.

All equipment (airborne altimeter) is used at night. **Navigation**—The ground controller, using the larger, more powerful GCI (ground control of interception) equipment, has directed the fighter by VIII to the general vicinity of enemy bombers.

Another was the bearing down to 75 feet straight over the runway on AT-11 by GCA (ground controlled approach), a system which has great promise in post-war air transport and in performing postwar service on 190 June (see AVIATION NEWS, June 18).

IFF (identification of friend or foe) is similar to radar in that a pulse is transmitted from ground station, ship or aircraft which triggers a set in the aircraft being challenged so that it responds in a coded impulse identifying itself as friendly. **Bebecon-Bu-cka** is IFF in reverse in that a paraboloid drops from an enemy pathfinder transport plane and sets up a light-weight ground beacon (Bu-cka), after which the bulk of the following transporters send out a coded pulse from their Bebecon transmitters which triggers the return from Bu-cka.

When the "bip" is centered on the scope, this is "in," the dropping zone. This system obviously has post-war possibilities in short-range navigation.

Locom—A much more elaborate system of long-range navigation (Locom) uses "wheels" and "slaves" beacons, impulses from which are plotted on special Lucas charts to obtain a fix in pitch darkness or in any type of weather.

The climax of the Boca Raton radar demonstration was a simulated reconnaissance mission in ten B-17s (five reconnaissance in each echelon) up the east coast of Florida and back to Boca Raton.

The BTO equipment used in B-29s was demonstrated on a runway and narrow strip along the coast appeared as sharp outline on the "plan position indicator" scope, and the runway near Ft. Pierce was indicated as a short white streak. "Beacon," taking scope airfields also showed up very clearly, and the pilot of each plane received full instructions all about the way from the Radar-Navigator. By comparison with the flight chart and radar scope identification of landmarks was unmistakable.

(See photos on Page 18)

Price Tag Battle Beginning As War Production Finishes

West Coast aircraft companies shift attention to production cost problems with eye to heightened competition in market where dollars, particularly abroad, are limited.

The end of war production and the consequent great dependence upon commercial orders, even this soon, has set West Coast aircraft companies to work on that vital factor of civilian economy: production costs.

The possibility that a "price tag" battle may develop in the sale of made-in-America air transports can be foreseen in the vigor with which major manufacturers are attacking that item.

Price Regard—During the war, and to a certain extent even before, engineers showed little concern over the selling prices of their commodities. Before the war, the market was limited and buyers were few in number. Also limited were the available types of transport aircraft.

If the place of one manufacturer cost \$50,000 more than the most comparable transport of another builder the buyer usually could be shown that the difference would be

absorbed in performance or maintenance advantages.

The picture now probably will be different. More manufacturers will be building more planes for more customers. . . . Customers from every nation in the world, who today have time on their hands to "shop" for the planes they will begin to receive a year from now. And many of tomorrow's buyers of American planes, especially airlines of foreign countries hard-hit by the war, will be extremely price conscious.

Market Reaction—Evidence of an industry reaction to expanding markets anywhere is more openly evident than on the West Coast, especially in the Los Angeles-San Diego area where at least three major builders are competing in the designing of multi-engine passenger and cargo planes.

The western builders, counting a possession of foreign and domestic airline presidents and engineers,

are in the midst of a notable campaign of production line "housecleaning," all of it aimed toward early commercial manufacturing and a sudden termination of the bulk of military orders.

A good example of what is happening can be seen at Douglas Aircraft Company's home plant at Santa Monica, where the main assembly line for military C-54's has evolved into a set-up which should reduce production costs drastically when the commercial go-ahead is given.

Halved Hours—Douglas officials report that already they have been able to reduce by 50 percent the manhours going into the C-54 since reviving the assembly line.

A key device in attaining this economy is the use of massive stationary work platforms running the length of the assembly line and rising in steps from the floor on either side of the fuselage to the outer wing area. By this expedient alone, the Douglas company is reducing by thousands of hours the time formerly lost in requiring workers to climb up and down ladder-like portable work stands, and in moving those stands from one section of the plane to another as assembly progressed.

That Douglas has been able to cut manhour costs 50 percent on the C-54 does not indicate at this date that the company's customers for post-war DC-4's, DC-6's and DC-7's will see a sudden lowering of wartime estimates of the prices they will pay for these transports.

Reflection—But it does indicate that individual manufacturers are able to reduce production costs appreciably and in a manner that will be reflected by sound commercial earnings and a reasonable lowering of price tag figures if competition requires such a step.

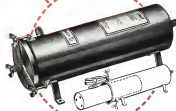
Single Moving Part Marks New Fuel Pump

With only a single moving element, a new fuel booster pump has been announced by Pease Products Co., division of Borg-Warner. Qualities claimed for the novel pump range from mere positive vapor separating characteristics to increased economy through freedom from internal wear.

Using an explosion proof motor, and available for external mounting on the tank, internal use submerged in the fuel itself, the pump's only moving part is an impeller rotor fitted with tapered



AIRBORNE DEHYDRATING EQUIPMENT



This D-10 Dehydrator Unit for the B-29 bomber is an excellent practical application of the Russell R. Gannon System for the control of moisture content, relative humidity, and dew point of air and gases.

This unit including its dehydrating cartridge weighs but four pounds and has a moisture pick-up capacity of 50 grams of water while maintaining a dew point of 90°F below zero.

The Gannon System is applicable to many other

dehydrating problems, and usually eliminates expensive and cumbersome installations.

The dehydrating chemicals are so inexpensive to replace as to be expendable at a negligible cost. Precision tested dew point value discharge indicators are available to insure accuracy of working conditions.

If you have a dehydrating problem, consult Gannon. Gannon's Engineers welcome your inquiry.

Russell R. GANNON
AIR CONDITIONING EQUIPMENT
Cincinnati 2, Ohio



In the Grease: At Douglas Aircraft Company's Santa Monica, Calif. home plant C-54's in final assembly move down a slot, the sides of which are treated by stair-step stationary work platforms moving the length of the line. The platforms eliminate cramped working positions and replace batteries of portable scissorwork work stands which had to be spotted for each assembly function and then removed and relocated with every movement of airplanes on the line. Douglas reports a 50 percent cut in manhours going into the C-54 assembly.

blades on one side and small "cupped" blades on the other. The cup-blades rotate within a slight bearing and provide a vacuum system that sucks out vapor and eliminates it through a discharge outlet, assuring admission of solid fuel only to the fuel line.

► **Climb Fast**—Self-priming under extreme conditions, ability to pump the tank dry, and positive vapor control in rapid climbs to high altitudes are said to be possible with the new pump.



Hot Box: With its lid removed, the new Surface Combustion Corp. high altitude spark ignition system for aircraft heaters reveals the new internal coil placement and filter arrangements.

ing is given at the present time by not more than 10 of the 140 engineering colleges in the country.

'Very High' Altitude Heater Ignition Claimed

Believed to operate at the highest altitude at which a combustion type aircraft heater has ever been spark-ignited, a newly announced ignition system, produced by the Surface Combustion Corp., is now standard equipment for current Douglas C-54's.

Heaters equipped with the new system can be ignited, and will burn without fuel preheating from sea level to 60,500 ft. at 67 degrees below zero, F., according to the company.

► **Lead Wear** — Service requirements are adjusted now after recording several ships upon which

Ryan Retirement

An employees' profit-sharing and retirement plan, financed entirely by the company, has been announced by Ryan Aeronautical Co. Each year, approximately 10 percent of net profits will go into a Ryan Retirement Trust.

All employees on monthly salaries are eligible after a year of service with the company. Benefits are computed on basis of salary and length of service. Ex-Ryan workers now in the armed forces will receive full credit for time in the service provided they return to the company within 90 days of discharge.

Retirement payments will be made to an employee upon reaching the age of 60, or on termination if he should be earlier. Disability is also covered.

the ignition coil box assembly had functioned more than 1,000 hours without attention.

Extremely sensitive and responsive thermostat control is claimed for the system along with elimination of radio interference.

New Engine 'Pack' Uses Aluminum Foil

A new packaging material for the moisture protection of airplane engines and replacement parts has been developed by Goodyear Tire and Rubber Co., utilizing aluminum foil and a film with a plastic base.

A P. Landfield, manager of Goodyear's Plastics department reported that in the search by the Army Air Forces for a moisture proof, heat-sealing, material for the packaging of airplane engines, it was found that a laminating of aluminum foil and Goodyear Vitelium gave excellent results.

► **Production Line**—The new material is being developed by the Debevoise Co., of Cleveland, and is being fabricated into envelopes for the packaging of airplane engines by the Kennedy Car Liner & Bag Co., of Shelbyville, Ind.

Irving Air Chute Co. Files Annual Salary List

George Watts, president of Irving Air Chute Co., Inc., was paid the sum of \$49,668 for his services as president, general manager, and director of the company for the fiscal year ended Dec. 31, 1944, according to the company's annual report to the Securities and Exchange Commission.

Other salaries included \$10,000 to Leslie L. Irvin, vice-president and director, and manager of the company's subsidiary, Irving Air Chute of Great Britain, Ltd. which paid \$25,668 of the salary, and \$10,000 to Harold G. Rogers, assistant treasurer and manager of the company's Lexington, Ky., branch.

► **Salaries Paid** — The company's statement of profit and loss showed net sales of \$4,544,378 in 1944. Cost of sales amounted to \$5,703,108. Net income before provision for taxes based on the current year's income amounted to \$539,624, and to \$346,614 after those obligations were satisfied. Net income transferred to surplus amounted to \$35,974.

"Today, I fly an all-metal fighter....

tomorrow, I'll have fun in an all-metal SILVAIRE!"



NOWHERE less than the best is good enough for our combat pilot. This explains why nearly every fighter plane is of all-metal construction — it ensures maximum structural strength... longer service life... and even strengthening the increases all speed.

Soon, you'll be able to enjoy your own personal plane. Naturally, you'll want it to be all metal. So, look first to Luscombe—pioneer builder of all metal personal planes.

In a handsome, powerful version of the SILVAIRE, Luscombe will offer you a truly fine personal plane completely proved... a steady, de-

pendable plane that's easy to operate... an efficient beauty surprisingly low in maintenance cost. Additional information will be sent on request. Merely mail coupon below.

LUSCOMBE AIRPLANE CORPORATION
DEPT. P, NEW JERSEY - RARITAN, TEXAS

Send Voucher, we'll continue to make all metal parts and metal sub-assemblies for United Nations' fighter planes. Thus, our vast experience of experience gained during years of producing all metal light plane fabrications again will be devoted to the production of all metal fighters. Now, you may own SILVAIRE that will do much more, making tomorrow the age of light.



SILVAIRE

AMERICA'S FIRST ALL-METAL PERSONAL PLANE

BY LUSCOMBE

Luscombe Airplane Corporation
Trenton, New Jersey, Dept. H

☐ Please tell me more about the SILVAIRE

☐ I am interested in a SILVAIRE delivery

Name _____

Street _____

City _____

Commercial Jets Seen Too Costly

Sounded Off Indian survey finds experts pessimistic about commercial and private plane jet use; turbines priced.

Jet planes, even with their ability to use heavy fuels, will probably not come into ordinary use for private or commercial purposes for a long time, if ever, according to the research department of the Standard Oil Co. of Indiana.

The company has recently completed a survey of expert opinion as part of its study of future fuels and requirements. The survey dealt extensively with coal products.

► **"High" Cost**—A jet plane must fly high and fast, it is pointed out, and since high altitude, high speed, flight is expensive—no matter what kind of engine is used—the experts feel jet planes will hardly fit into the economic picture. For a number of reasons, including fuel economy, most commercial flights will be at speeds less than 300 mph. and at altitudes under 20,000 ft.

Although the fuel burned by jets may be slightly cheaper than gasoline, this advantage cannot

offset the greatly increased fuel consumption of the jet type of propulsion.

However, the piston engine is due to lose much of its present popularity, the survey asserts. Most experts feel the large airplane of tomorrow will use propellers, but that the propellers will be driven by jet turbines. These turbines may be held back for a time by the fact that they use more fuel than the highly-perfected modern piston engines, but their advantages should enable them to replace present engines. Perhaps the two may be used in combination.

► **Simple Design**—Among the advantages of gas turbine engines, it was pointed out, is that they offer fewer design problems—particularly in large sizes—and they are simpler to operate and maintain. Whereas piston engines become increasingly complex as size goes up, turbines ought to be actually easier to build in the very large sizes than in small sizes. Smoothness of the turbine operation will be another great advantage both to the plane designer and to the passenger.

First planes to use the turbines will probably be those flying less than 1,000 miles, where the extra fuel will not be a burden. As more

heat-resistant materials are developed for turbine blades, and as efficiency therefore goes up, the turbines will be used more widely—particularly in planes now built that need engines of greater than 3,000 horsepower.

Catapult Might Speed Airmail Deliveries

Navy airmen tell correspondents about carrier delivery time would be halved by landing on post office roof.

Adoption of airmail carrier takeoff and landing techniques to civilian operations after the war is a matter of serious study, says Navy airmen, many of whom see peacetime uses for catapults, arresting gear, small, movable landing fields with planes specifically designed for commercial operations using these facilities.

The experience of the war, said one group aboard a modern carrier recently, has perfected techniques to a point where experienced pilots and crews can operate from carriers with the same degree of safety that their land-based counterparts experience.

► **Focus: Many Advantages**—Without all of the restrictions implicit in operation from the small, portable airport which a carrier is basically, these Navy men foresee many advantages for landing and loading facilities developed from their experience.

Probably the greatest progress has been made in the development of catapult operations on carriers since the arresting gear and barrier systems has been pretty well standardized.

Using less than 100 feet of space, planes are launched from carriers as a routine matter today in everyday flights. Their use has enabled the United States Navy to operate far more planes from each carrier than any other nation had approached before the war.

► **Needs Longer Takeoff**—Carrier officers feel that a peacetime use of the catapult on shore would require redesign for a longer take-off run to afford less shock on acceleration. But even the short distance of carrier catapult operations does not place a serious strain on the pilot, they point out, with the strain estimated at a single "G".

Adaptation of the arresting gear also would lengthen the space utilized from less to 300 feet to perhaps twice that distance with



All over the world...from the mud-caked European fields to sun-baked airstrips in southern Burma... Federal Instrument Landing Systems are "bringing 'em in"... on the beach.

Bombers, pursuit ships, night-fighters, transports... American, Canadian, British, Russian... ships wearing all the colors of the Allies... coming in on this "pathway

to earth", day and night, through the toughest kinds of flying weather.

This is the instrument landing equipment that Federal developed over more than ten years of intensive research... and which has set the standard for aerial navigation equipment in all parts of the world.

For the coming "age of the air"... see Federal first for the finest in aerial-navigation and communications equipment.



Federal Telephone and Radio Corporation



Newark 1, N.J.



POWER BY AIR

Fifteen of these diesel power plants for Caterpillar tractors, weighing nearly three tons apiece, were flown by plane from Bitter to Anzao, Burma. Recently needed, they made the first part of the trip from Columbus, Ohio, by train. They were then repacked by cargo carriers at the Miami ATC Air Terminal and loaded aboard C-54s, with just inches to spare, for the long flight.

The Birdmen's Perch

By Major Al Williams, AIAA, "TATTERED WING TIPS"
Gulf Aviation Products Manager, Gulf Bldg., Pittsburgh 30, Pa.

\$100 worth of War-Bonds-for-air-planes, better make it \$160 to cover spurs and extras!

PRESSURE POLITICS

What do you do when you need your engine?

You shut both eyes and the oil pressure gauge and watch it like a big, hairy hawk (Golfback, of course, Adv.).

Why? Because oil pressure and oil temperature gauges tell you whether you're



getting proper lubrication—and if you're not, you're not going to fly!

However, if your tanks, lines, controls, and gauges are in good operating condition, you'll get correct readings as your oil circulates. Especially if the oil system is full of fresh GulfBldg.

For GulfBldg's new oiling unit, the Alchlo Process, removes for more of the carbon-containing hydrocarbons that are removed by ordinary methods from low-grade lubricants. And this super-refining makes GulfBldg a super-lubricant which will keep a super-kind of oil between metal surfaces.

But if you should get oil pressure readings that were too high, here are some of the probable causes:

Is oil temperature too low?
Is viscosity too high?
Is too much weight on oil pressure relief spring?
Is pressure gauge defective?



Next month, we'll cover the oil pressure readings. Meanwhile be sure you're using GulfBldg Oil of the viscosity recommended by your engine maker.

YOU TOO CAN BE A PERFECT PILOT DEPT.

Very easy it is, too!

Just wear your Little Known Fact About Well Known Flap—tailhook proof—and read it to us at the Gulf Building. (Address right above.) If your "fact" is super-amazing, we'll print it, and then very easy and you'll come on as Perfect Pilot (No).

Do it five times, and we'll promise you to Senior Deck Pilot.

Please just mail a connection to Harry P.O., 2021 Kinnelon St., 1460, Hawaii, 1st.



"Bounded men are transported away from contact areas in a disposable tank-like filter bound under P-80's."

July 8, 1941, PO Box 125, Leachville, Ark., says

"On a six-hour mission, a B-17 was caught by Gulf Aviation (GulfBldg, no doubt) to run the average daily use for three years!"

And Joe Inc., 1145 Chesapeake Road, Paul, Tex., proved this statement:

"The distance between the pilot's left hand, and the co-pilot's right hand, when they are at their stations in the office of the B-29, measures 4 feet!"

Golf—let's have some more!

Gulf Oil Corporation and Gulf Refining Company...makers of



OIL IS AMMUNITION—USE IT WISELY

Atom Air Fuel

The atomic bomb has renewed the hopes of believers in the possibilities of atomic energy, long a favorite dream of scientists. Four years ago Igor I. Sikorsky, one of the nation's most brilliant aeronautical scientists, wrote:

"One gallon, or six pounds, of fuel would carry our 30 ton flying Clipper a little more than one mile on the basis of the energy of combustion. The same six pounds of some proper substance would carry the Clipper at least 40 times around the world if only part of the subatomic energy were utilized."

consequent lessened strain on the equipment and the crew.

Carrier officers are the first use of the catapult and shortened landing fields in the movement of air mail between large cities, using roofs of post offices as operating bases. They point out that the saving in time between normal operations of transferring mail to and from ordinary fields would justify the use of specially-equipped planes for the service. For example, the Navy's new delivery systems to nearby trade center towns. Some, however, believe that development of the helicopter will probably supersede such development because of the advantage of the helicopter in requiring less mechanical investment.

Carrier techniques also can be used to advantage, these officials feel, in sections where large landing fields would be prohibitive, filling many sections of Central and South America as an example where mechanized transport would make normal landing fields too expensive to be economically feasible.

Thousands of pilots will be trained in these flight techniques with the aid of the use as well as thousands of men who are familiar with the machinery and the handling of planes. To them, operating under flight deck conditions has become routine and anything larger than a postage stamp has possibilities as an airport.

—W. G. K.

Scott

PARKING BRAKE VALVE
for All Aircraft with Hydraulic Brakes



SPECIFY AS
Standard



Specify the fully service-tested Scott Model 4200 Parking Brake Valve for all airplanes equipped with hydraulic brakes. Fully CAA Approved, increases the safety factor for pilots and flight personnel alike. There are 2222 parts from: Weight of valve and assembly, 4.75 lb. Working pressures—50 to 250 lb. Operating temperatures 40° F to plus 165° F. On the mechanical side, the Scott Model 4200 has an AN-A-17 Aluminum Alloy body, hard brass seat and steel plated arm assembly. Scott Quality-built, you'll find it adds no additional sales feature to your airplane.



Scott
AVIATION CORPORATION

304 E. 10th Street
LANCASTER
NEW YORK

PERSONNEL

A. F. Bonnallie Named UAL Operations Aide

Allen F. Bonnallie has been named assistant to the vice-president, operations, of United Air Lines, with headquarters at Chicago. Bonnallie, who has been flying since 1911, achieved a brilliant record in World War I. He received the British Distinguished Service Order with the RAF and also holds the U. S. Distinguished Service Cross. During this war he has been a commander in the Navy in the production division of the Navy's Bureau of Aeronautics.

Former test pilot and manufacturer, Richard Bellair Williams has been appointed senior assistant engineer for Western Air Lines. Williams was test pilot for Boeing Aircraft and later flight test supervisor. He has been senior assistant president of Aeronautical Manufacturing and Engineering Co.



LEAVING GOVERNMENT SERVICE:

Three key men who have announced their plans following departure from the War Production Board's Aircraft Division. Left to right, Leo Pankin, assistant to the director of the division, who is returning to private business in Lansing, Mich.; Jean H. DuBoque, technical consultant to the director, who now becomes assistant to the sales manager of Beech Aircraft Corp., Wichita, to handle customer service, export sales and staff duties; and Morton Wilner, deputy director, who plans to open his office in Washington. The division received restrictions on aircraft production and recently dissolved, leaving only the director, Henry P. Nelson, at WPA.

Arthur C. Smith has assumed duties as assistant engine traffic manager for Western.

Dever Elected President Of Honeywell Subsidiary

Election of Henry F. Dever as president of the Brown Instrument Co., subsidiary of the Minneapolis-Honeywell Regulator Co., has been announced. Dever has been serving as vice-president in charge of engineering for Minneapolis-Honeywell and succeeds Charles B. Sweatt as president of Brown. Dever has withdrawn from Brown and will devote his entire attention to supervision of expanded sales activities of the Honeywell organization of which he is a vice-president and director.

William J. Edson, assistant general manager of the B-24 bomber modification center operated by Northrup Aircraft at St. Paul Airport, has been transferred to headquarters in St. Paul to assist E. J. Wayant, vice-president-in-charge, in establishment and operation of budget procedures. Edson has been succeeded at the

bomber project by R. E. Gwendy, former contract termination manager for the company.

Ray Canaan has been named district publicity representative for United Air Lines in New York, succeeding Fred S. Hunter, resigned. Canaan was formerly assistant director of public relations for PCA in Washington.

Alma G. Bay (photo) has been appointed service manager of Sikorsky Aircraft Division, United Aircraft Corp. Bay has had wide experience and transfers to Sikorsky from Hamilton Standard Propellers Division where he has headed the Wright Field office for two years.

Walter F. Campbell will replace him at Wright Field. Chappel has been at the East Hartford plant. Prior to his Wright Field assignment, Dever served as chief engineer of Canadian Propellers, Ltd., at Montreal.

Capt. Don Hughes, Jr. (photo) has been named assistant chief pilot of Braniff Airways, Inc., replacing Capt. N. A. Lorenzano who has returned to active flying service for the company. Captain Hughes has been with Braniff for ten years.

Solar Aircraft Co. announces that Richard Peterson, formerly contract War Service manager of the Des Moines plant, has been promoted to assistant division manager, with headquarters at San Diego. Replacing Peterson at Des Moines is William Guede, who had formerly been the manager of Solar's Dayton office.

C. J. Miller has been promoted to assistant division manager of PCA. He has been manager of the Cleveland area. Robert H. Routhman, Jr., formerly district traffic manager in Chicago for PCA, has been promoted to regional traffic manager with headquarters in Cleveland.

Lieut. Col. Sanford I. Wright, former operations officer at Westover Field, has joined American Export Airlines as superintendent of maintenance oversight. Wright served with the Civil Aeronautics Administration before going on active duty.

R. C. Mackay, former Consolidated Valves Aircraft Corp. factory manager, has been appointed general superintendent of Globe Aircraft's plant No. 8.

SUPER SERVICE FOR THE PLANE OWNER

From the smallest individual job to complete fleet overhaul . . . the key-note in the operations of Grand Central Airport Company's huge modern facilities, is efficiency, thoroughness, attention to each and every detail, topped by prompt service. Specifying in reconstruction, maintenance, service and overhaul of airplanes, engines and every type of aviation equipment, a remarkable record of customer satisfaction and

good-will has been achieved . . . ON MERIT ALONE. During its period of growth, orderly convenience has been developed along with the most modern production equipment and methods, operated in spotless surroundings. This is a tribute to the individual incentive, ability and experience of Grand Central Airport's personnel, who have grown up with aviation, know their business and whose lives are devoted to safety in the air . . . This organization terms with experience, and its motto is PRECISION—PRIDE—SAFETY.



GRAND CENTRAL AIRPORT CO.

ESTABLISHED 1929

AUTHORIZED AND APPROVED SALES AND SERVICE FOR ALL TYPES OF AIRPLANES AND ENGINES

GRAND CENTRAL AIRPORT

GLENDALE (LOS ANGELES CO.) CALIFORNIA

HOME OF THE FAMOUS CAL-AERO TECHNICAL INSTITUTE

Our Policy

BUY MORE
WAR BONDS
— AND —
GIVE TO THE
RED CROSS

PRECAUTION . . . PRECISION . . . SAFETY

C-W Public Relations Adds New Director

Charles H. Aagaard has been appointed director of public relations for the Amplane Division of Curtiss-Wright Corp. He succeeds A. D. Fiske, Jr., who has resigned after 10 years with the company.



public and internal relations department of the division in 1942 and was named manager of public relations for the Buffalo plant in 1943.

S. B. Childs (photo), has been made Northwest Airlines assistant traffic manager at Detroit to assist W. H. England, district traffic manager. Childs formerly was chief passenger agent at Seattle for Northwest Airlines.



Northwest's eastern region. Smith flew the first survey flight to Alaska in 1942 to establish a military campsite and, under his direction, Northwest pilots are now flying daily trips as far out as the Alutian Islands. He succeeds Dr. J. King who will become a captain on the company's easternmost routes.

Ted Palmer, formerly a member of Douglas Aircraft Co.'s public relations staff and editor of the Henry J. Kaiser Co. steel division house paper, has joined McGraw-Hill Publishing Co. as chief of the Pacific Coast News Bureau at San Francisco. He succeeds Joel Erickson, who recently resigned because of ill health.

Robert C. Starnes (photo), for eight years in the personnel and industrial relations department of Lockheed Aircraft Corp., has joined the Aurora Manufacturing Corp., manufacturers of radio and electronics equipment with plants in Kansas



Barbark; Greenwich, Conn.; Chicago and New York. He will be a member of the industrial relations department.

Donald H. Whempster has been named sales manager of the asso-

national division of Minneapolis-Honeywell Regulator Co. With the formation of the division in 1961, he was placed in charge of the servo field section.

Edward F. Rhodes, Jr., has been named assistant chief engineer of the Ryan Aeronautical Co., and will be given complete charge of engineering administration. Before joining Ryan, Rhodes was chief project engineer for Bell Aircraft Corp. on the P-59 Aircomet.

William V. McTaggart (photo), who was with the American Railway Express Co. for 15 years, has been appointed cargo representative at the New York office of TACA Airways Agency, Inc., which represents the line in the U. S. McTaggart was at



pointed an instructor in traffic control air transportation at Temple University.

John M. London, former city traffic representative for National Airlines in New York, has been promoted to New York traffic manager. Before joining NAL, he was a member of the Military Transport Division, ATC, stationed in Seoul.

Dr. E. G. Lederer (photo), medical director of PCA, has been appointed director of personnel administration. His new organization will handle the hiring of new employees at key PCA air terminals. Thomas A. Kerr, Detroit district traffic



been promoted to regional traffic manager, to supervise traffic activities in Detroit, Flint, and Upper Michigan.

Robert M. Toomey, chief of the CAA's flight engineering section for the south region, has been assigned to Wright Field for an indefinite period as CAA representative on commercial requirements. Toomey's first assignment will be certification testing of the Boeing XC-87.

Robert Loustar, formerly district manager of passenger service at Salt Lake City for Western Air Lines, has been appointed system supervisor of reservations and service with headquarters at Burbank, Calif.

S. B. Taylor has been elected president of the Parker Amusement Co.

makers of aircraft and industrial valves and fittings. He succeeds H. E. Markham who has been made chairman of the board.

George E. Hall (photo) has been named director of research for Continental Air Lines. For the past year he has been assistant professor of economics at the



tions courses. He will serve in the traffic department while filling the newly created post. Previously, Hill had been with the CIO and the government.

L. H. Fletcher Blüser (photo), has been named district traffic manager for Northeast Airlines at New York City. Blüser joined Northeast in April 1944 and served in the company's military - transport division in Newfoundland, New



land. Since entering the traffic department, he has served at Moncton, New Brunswick, and at Montreal as district traffic manager for eastern Canada. He replaces R. H. Kibbitt, Jr., who resigned.

G. Richard Chaffner (photo), has been named new Aviation Commissioner of the Chamber of Commerce of Kansas City, Mo. succeeding **Richard C. Murray** who has joined Transcontinental and Western Air, Inc. Chaffner was with the Alcoa Co. of



America and was assigned to Pratt and Whitney Aircraft Corp. of Missouri. He also served as liaison officer with outside plants and was assistant to the general manager.

Howard L. Hartman has been named assistant director of contract termination for United Aircraft Corp. Hartman was formerly with the Chance Vought Aircraft division at Stratford where he was executive assistant to the general manager.

Promotion of Vincent F. Wilben, AFMCC, public relations officer for the First Troop Carrier Command, from major to lieutenant colonel has been announced.

AIRCRAFT INSTRUMENTS

by GENERAL ELECTRIC



OTHER TYPES OF AIRCRAFT INSTRUMENTS

Ammeters and voltmeters
 Facilities-indicating equipment
 Pressure-indicating equipment
 Tachometers and synchroscopes
 Liquid-level-indicating equipment
 Remote-indicating compasses
 Gyrocompasses

Remote-indicating Temperature Equipment

●On present-day aircraft, two basic systems of temperature indication are widely used. They are the ratio-type, which is used for the indication of oil temperature, carburetor-air temperature, and outside-air temperature, and the thermocouple-type, which is used for the measurement of exhaust-gas temperature and for other special applications.

Although the required range of each of these individual instruments is different, the construction of these G-E instruments is such, even to the extent of omitting names of functions from the scales, that a single design can often be used for various purposes. However, when special requirements are encountered, G-E engineers will be glad to work with you on the specific problem.

When our facilities are no longer needed for you, we will continue to build many designs of speech instruments to meet your needs. *General Electric Company, Schenectady 5, N. Y.*

Buy all the BONDS you can—and keep all you buy

GENERAL  ELECTRIC

Trend to Ban Single-Engine Commercial Operations Seen

CAB non-scheduled pay flight regulation proposals point toward elimination of small craft in that category by severely limiting their use; vigorous industry opposition expected.

By ALEXANDER MCSURELY

Stringent operation regulations proposed for non-scheduled commercial aviation, which were circulated last week to the aviation industry by the Civil Aeronautics Board, are likely to result in a vigorous expression of opposition from many charter flight operators.

Representatives for, and supporters of, almost all types of single-engine aircraft, indicate that the trend of the regulations is toward eliminating them from commercial operations, by so restricting their operation that only in exceptional cases would their operation be profitable.

Pointed Question — One of the questions accompanying the proposed Part 43 asks whether single-engine equipment should be limited to operation within 500 miles of the base when equipped with engines having less than 100 hp, operation within 25 miles of the base at night, unless each occupant has a parachute, or operation is confined to a lighted survey or within 25 miles of a lighted airport; or operation under instrument flight rules (IFR) unless each occupant has a parachute.

And sub-section 43.10 of the proposed regulation would provide:

Single-engine land aircraft, except for takeoff and landing, shall not operate over water beyond safe power-off gliding distance from land.

Single-engine sea aircraft, except for takeoff and landing, shall not operate over and beyond safe power-off gliding distance from open water.

Single-engine aircraft shall not be operated at night or under instrument flight rules except under conditions specified in the operating certificate.

After Dec. 13, 1947, single-engine aircraft shall not be flown at

night or under instrument flight rules.

Since a very large percentage of current charter flight operations are being made with single-engine aircraft of 4-5 passenger type, or even smaller planes for one-passenger trips, Part 43 presumably would bring about a radical revision in existing charter equipment if adopted in this proposed form.

Requirements prescribed for pilots include:

Industry Queried On Part 42

New questions submitted for comment by the aviation industry in connection with the proposed new Civil Air Regulations Part 42, which would establish certification and operation rules for non-scheduled commercial air operations, are:

1. Shall regulations provide that the operator certificate list types of service and operations ratings as follows:

- a. Service:
 1. Cargo;
 2. Passenger;
 3. Cargo and passenger.
- b. Types of operation:
 1. CFR (Civilian Flight Rules) day-land;
 2. CFR, night-land;
 3. IFR (Instrument Flight Rules) day-land;
 4. IFR, night-land;
 5. CFR, day-water;
 6. CFR, night-water;
 7. IFR, day-water;
 8. IFR, night-water.

2. Shall use of single-engine equipment be limited to:

1. Operation within 500 miles of operating base when equipped with engines of less than 100-hp?
2. Operation within 25 miles of base when operating at night unless each occupant is equipped with parachute or operation is confined to a lighted survey or within 25 miles of lighted airport?
3. Operation under CFR unless all occupants are equipped with parachutes?

First pilot: He must hold valid commercial rating with turbine type and class rating for the plane he flies, for CFR day flight he must have had at least 50 hours cross country flight time as pilot or copilot.

For night and instrument flight rules (IFR) trips he must have a current instrument rating and a total of at least 300 hours flight time including 100 hours cross-country of which 25 hours were in darkness, and 50 hours of solo instrument flight. He must have, within the preceding 90 days, made at least three takeoffs and landings to full stop with the same model plane, and for night flight, he must have made at least three takeoffs and landings to full stop at night, within the preceding 90 days.

Second pilot (in plane requiring more than one pilot) He must hold valid commercial pilot rating with type and class ratings for the plane he will fly for CFR day flights, and for night and IFR flights in addition must have a current instrument rating.

An additional general require-

ment shall pilot time flown in other than commercial operation be counted against maximum allowable pilot hours specified in sub-section 42.21?

Shall carrier be required to use pilots with experience acquired by sub-section 42.22 only when the flight is 400 miles or more from operating base?

Shall carrier be required to use pilots who have had at least 50 hours of overwater flying out of sight of land, when engaging in pleasure operations?

Shall pilots operating aircraft more than 500 miles from operating base be required to meet first-class physical standards prescribed in CAR Part 25 within each 6 month period?

Shall carrier be required to have second pilot on aircraft when first pilot is required to fly more than 8 hours out of any consecutive 24 hours?

Shall carrier be limited to particular operating area determined by terrain adjacent to base, type of aircraft and navigational aids available?

Shall carrier be required to have its own ground radio facilities and to limit its operations within the area where these facilities are available?

Colossus of the Cross Roads ... your fortune depends on his



It's a fact, not a theory, that your income — no matter how you earn it — is geared to the farmer's income. If he's prosperous, so are you. Your fortune depends on his.

Agriculture's people are so big a part of our population that any increase in their buying power pushes the whole national income up. Leading economists have charted farm income and national income over a 17-year stretch, proved that national income is always directly proportionate to farm income.

Thriving agriculture, thriving country! It's in Economic Law we have here; and it's justice feeling good about the \$23,000,000,000 Co-Operative last year, and the \$1,000,000,000 he has sold away in savings.

But perhaps more to the point, a thriving agriculture means a big market for mirrors. Farmers are the likeliest civilian-aviation prospects in sight. Our survey reveals that 60% of all personal planes sold immediately after the war will go to the residents of rural areas!

Need any better reason for eyeing the farmer keenly? Or for eyeing with equal interest this favorite magazine?

What business can ignore the farmer's strength?





Excellent Views: The "pod" lines of the Skycraft fuselage, and removal use of window plastic, assure a vision range seldom offered. The fuselage lines provide a good degree of vision to the rear.

have already been employed and the firm is giving preference to veterans in building up personnel. The company expects to offer free instruction, by its own pilots, to purchasers.

Seeks Airport—The company now operates a large aeronautical repair station at Reno, Nevada, and has headquarters at Grand Central Airport, Glendale, California. Plans are now underway to take over a private airport near Los Angeles for the company's use.

Howard Brown and his brother, T. N. Brown, have a background of automobile distribution stretching back to 1919 and expect to market planes and automobiles through the same dealers. Howard Brown has been a pilot since 1925. He attributes public interest in the

Voyager 125 largely to the safety record of the pre-war Voyager, the post-war plane's sport-constant characteristics, 114-mph. cruising speed, its attractive appearance and economical operation over long distances.

Skycraft Lightplane Nears Auto Comfort

Los Angeles design reveals four-place pod-type seating passenger considerations.

Completion of the engineering design of the Skyhawk Manufacturing Company's Skyhawk reveals a personal aircraft which could rank among the most attractive of West Coast post-war offerings.

Artist's sketches, and a scale model of the Skyhawk, show one of the closest approaches to automobile passenger convenience yet presented in a four-passenger airplane.



Aimed at Passenger Comfort: Automobile luxury is an obvious objective in this West Coast personal aircraft design. Skyhawk Manufacturing Company, Inc., of Venice, Calif., has named this four-passenger airplane Skyhawk, and expects to have the prototype ready for flight late September. Fine models, of varying horsepower, will sell in a \$4,990-\$5,995 retail price bracket.

"Speed Up"—Across doors are wide, the excellently streamlined body mounted on bicycle gear rides low to the ground, and unusually generous use of clear plastic in the canopy offers visibility comparable in fact to the Bessie —and that despite the fact that the Skyhawk is a pusher with engine mounted behind the cabin.

At Venice, Calif., Skyhawk officials say that the prototype should be completed by September, with preliminary flight and wind tunnel tests following immediately. They are negotiating for test time in NACA's big full-scale test tunnel at Moffett Field.

The company, currently engaged in military aircraft metal fabrication production, plans five Skyhawk models designed for Lycorne, Franklin or Continental engines ranging from 100 to 180-hp. **Speed-Range**—Specifications for the largest (125-hp.) model estimate a top speed of 150-mph; 125-mph. cruising speed; 99-mph. stalling speed, 600 miles range; 16,000-ft. service ceiling; and seats for four passengers (175 lbs. each, or equivalent), plus space for 50 lbs. of baggage.

Weight specifications call for an airplane gross of 2,650-lbs. 1,445-lbs. net weight; 1,200-lbs. disposable load; 1,450-lbs. normal load; 167-lbs. optional equipment.

Airplane dimensions are: wing span, 37 ft. 6 in.; length, 24 ft. 8 in.; height over body, 6 ft. 11 in.; height over engine, 6 ft. 11 in.; wheel track, 8 ft.; wheel base, 8 ft. 6 in.; wing area, including flaps and ailerons, 259 sq. ft.; flaps (4), 38 sq. ft.; ailerons, 22 sq. ft.

SERVICEABLE PLANES—LOW PRICES

Lockheed "Lodestar" Transports, Cessnas, Basic Trainers

FOR SALE

Government surplus aircraft are now available in a continuing sale through Reconstruction Finance Corporation.

These models are type certificated but

individual planes must be repaired to meet Civil Aeronautics Administration airworthiness requirements for civilian flight.



Lockheed "Lodestars"

Low-wing, all metal cargo and passenger transports. Powered by two Wright 1,200 h. p. engines. Hamilton standard constant-speed propellers. Gross weight passenger, 17,500 lbs.; cargo, 18,500 lbs. Fuel capacity 644 gals. Retractable landing gear and Fowler flaps. Can be inspected at Bush Field, Augusta, Ga. Sold directly by Aircraft Division, R. F. C., 1625 K Street, N. W., Washington, D. C.

Price: \$25,000 to \$30,000. Can be financed.



Twin-Engine Cessnas

Powered with two Jacobs Model LAMB engines, of 225 h. p. each. Operates on 73 octane gasoline. Cruises at approximately 140 m. p. h. Low-wing wood, steel and fabric construction. For sale at all RFC Sales Centers.*

Price: \$3,900 to \$8,300. Can be financed.



Consolidated-Vultee Basic Trainers

Single-engine, 2-place, tandem seated, with enclosed cockpit. Powered with 450 h. p. Pratt and Whitney Wasp, Jr., and Wright engines. Equipped with dual controls and blind flying instruments. For sale at all RFC Sales Centers.*

*SEE RFC ad PAGE 24 THIS ISSUE FOR LIST OF SALES CENTERS



RECONSTRUCTION FINANCE CORPORATION

A DISPOSAL AGENCY DESIGNATED BY THE SURPLUS PROPERTY BOARD

10-77

Final Airline Earning Increase Seen Despite Year-to-Year Lag

Current industry survey by Standard & Poor indicates substantial gain over 1944 income although compound traffic gains may narrow in final six months; huge new mileage demands forecast.

While year-to-year traffic gains of the air transport companies may tend to narrow in the final six months, full 1945 earnings for most of the airlines should be substantially larger than those of 1944, says Standard & Poor's current industry survey, *Air Transport*.

Reflecting an increased number of airplanes in service, fuller schedules, and a continued near-capacity demand for seats, 18 domestic air carriers experienced a 55 percent year-to-year increase in revenue passenger miles for the first quarter of 1945, according to the analysis.

Revenue Boost—Total operating revenues of \$43,332,000 were 45 percent larger than in the corresponding period of 1944, and lower unit costs, says the survey, raised combined net income to \$4,714,000, or \$2,165,000, a gain of 74 percent.

Contributing to this remarkable showing was a higher utilization of aircraft, and an imposed operating efficiency made possible by larger and more flexible fleets. Multi-engine planes averaged 54-46 revenue hours of flying time per day in March, as compared with 30 in the same month of 1944. The load factor has remained virtually unchanged at around 66 percent.

The survey emphasizes that fare reductions are bound to broaden the market for air transportation in the immediate post-war years by attracting a larger volume of traffic than would otherwise be obtained.

Mileage Forecast—Thus, it estimates that passenger miles will rise from \$20 billion in 1944 to about 43 billion in the first post-war year, and between 7 and 10 billion by the end of the succeeding four years.

Equipment requirements to meet

this anticipated demand will necessitate large expenditures. According to a recent survey by the Air Transport Association, United States airlines by 1947 will own a total of 975 airplanes, compared with a pre-war high of 556, a 1943 low of 166 (following Government requisition), and a present fleet of 395 airplanes.

Orders by airlines amounting to roughly \$193,593,000 already have been placed for 469 new airplanes, about half of which are high-speed, 4-engine craft that will carry from 44 to 190 passengers in contrast to the present 21-passenger DC3s.

Other orders are in the making, and the ATA survey estimates that within the next five years some \$250,000,000 will be spent for new airplanes and ground equipment. Of this amount, about \$500,000,000 probably would be obtained from bank credit, \$175,000,000 from depreciation and other non-cash items, and \$150,000,000 from equity financing.

Dividends Tight—Thus, says Standard & Poor's, while a very substantial increase in earnings is indicated for the early post-war years, dividends generally will be restricted and considerable dilution of equity is likely.

Among the important circumstances dominating the commercial air transport scene today, as outlined in the survey, are:

• The recent allocation of North Atlantic routes to two leading domestic airlines, as well as to Pan American Airways Corp.

• Release of more and more airplanes by the Army.

• Civil Aeronautics Board's revised rate recommendations for air mail rates for the "big four" airlines to a basis of 45 cents a ton-mile from a figure of 32 cents a ton-mile used in a previous show cause order.

• The continued growth of airline traffic.

• The prospect that business and earnings will show marked further expansion after the war.

CAB's offer for a basic air mail rate of 45 cents is the same figure suggested a short time ago by American Airlines. While earnings are to be held on the proposed rate, it is understood that both American and United air lines are likely to settle for the 45 cent rate. If the 45 cent rate becomes effective, it will be restrictive to Jan. 1.

The domestic carriers that are awarded international routes (of which the North Atlantic routes are the most important) will benefit both directly and indirectly, since the international operations will tend to swell the business of their connecting routes in this country. While the profitability of the international routes remains to be seen, there can be no argument with Standard & Poor's conclusion that even the less desirable of the international routes will yield at least some profit—through government subsidy if necessary.

Fairchild Indebtedness

Cut By \$7,500,000

A reduction of \$7,500,000 in the indebtedness of the Fairchild Engine and Airplane Corporation has been achieved through an amended credit agreement with four New York banks. In place of a total \$100 million of credit for \$25,000,000 at three percent interest, the company now can draw on \$17,500,000 at two and three-fourths percent.

The new agreement runs until November 15, 1947, a year later than the original date.

Cause—Webb Wilson, Fairchild treasurer, says the amended credit agreement is the result of lower anticipated financial requirements, and the successful offering in May of 50,000 shares of company stock.

United Aircraft Drop

Shipments by the United Aircraft Corp. for the period ended June 30, totalled \$168,354,796, this year, compared with \$204,545,501 for the same period last year. This year's volume, however, is subject to reorganization.

Net income for the quarter was \$3,416,189 while last year showed \$4,309,455 in the same category.

Proposed 'Big Four' Mail Cut Revised 'Upward' to 45 Cents

CAB amends recommendation for reduction to 32 cents from present 60 cents per ton-mile level; United, TWA, Eastern, American served show cause order; passenger fare slash possibly involved.

A pay rate of 45 cents per ton-mile for mail transportation by the "Big Four" air carriers is now proposed by the Civil Aeronautics Board.

The board, on Jan. 1, had directed the lines to show cause why their mail rates should not be reduced from the present 60 cents to 32 cents per ton-mile.

Notice Served—The new recommendation is covered in amended statements of tentative findings and conclusions and amended show cause orders served last week on American Airlines, Eastern Air Lines, Transcontinental Western Air, and United Air Lines.

The amended orders came on the eve of an average reduction of 74 percent to 45 cents per mile in passenger fares by these and other airlines. Insisted by American, this reduction—based on the basis of 300 lbs. per passenger, plus baggage, corresponds to 45 cents a ton-mile—now reflect Jan. 30 on the five transcontinentals, with other line follow-up suit between competitive points.

Although the board's mail rate show cause order did not say so, this may have been a contributing factor in the previous of the mail rate proposal. CAB, traditionally, has favored lowered air fares, and there was little likelihood that it would interfere with the proposed cut.

AA Asks Cut—Air fares have been around 5 cents a passenger-mile. American proposed on July 2 to cut them to 4.5 cents and reduce express rates to 45 cents a ton-mile, and at the same time asked that the board set the mail pay rate also at the 45 cent figure.

Board sources said it was the first time an airline had requested to CAB's standing invitation to submit overall rate plans.

In proposing the new mail rate, the board has attempted to strike a balance between the present 60-cent ton-mile rate and the originally proposed 32-cent rate in the light of rapidly changing war and equipment conditions. CAB hopes that the 45-cent figure will prove ample to provide reasonable security, during the transition from war to peace, against financing and speculative conditions in

Priorities Remain

Army routes and last week, after V-J-Day, that they may see no chance of elimination of the air travel guarantee system in the near future.

Conferences are being held, however, at which some consideration is being given to modification of the present arrangement, but what form that modification might follow were not disclosed.

passenger market, and type and availability of equipment.

"Necessity"—At the same time, it is hoped that this rate will be low enough to provide a competitive incentive for more economical performance. The board also made clear that it does not intend, by its action in these instances, to establish or endorse any new long-range rate making principles.

While the board, in its amended statements, found that overall, rather than isolated, cuts will provide "a better basis for judge-



FAA OFFICIALS:

These men were named early this month to head the Federal Airline Association for the coming year. Seated, left to right, are Thomas H. Davis, President, Aviation, Secretary-Treasurer, and Boardman S. Otto, Otto Airline, president; standing are Joseph J. Mitchell, Jr., Executive Director, former treasurer, and Harry H. Strayer, All American Aviation, reserve president.

ment in setting the mail rate" under existing conditions, it apparently has not ruled out the possibility of application of an allocated fuel cost formula at some future time under other circumstances.

Approximate differences in operating mail revenues that would accrue to the carriers under each of the rates are indicated by the following figures, based on amended cost cause estimates of revenue ton-miles of mail:

	Cost Rate	Cost Rate	Cost Rate
Jet	\$0.00000	\$0.00000	\$0.00000
Jet	\$0.00000	\$0.00000	\$0.00000
TWA	\$0.00000	\$0.00000	\$0.00000
Jet	\$0.00000	\$0.00000	\$0.00000

It should be pointed out, however, that these figures do not indicate true yield. The actual rate received is slightly less in each instance due to the fact that more revenue ton-miles are flown than are compensated for.

This situation arises because compensation is made on direct air-mile-to-airport mileage and does not take into account occasional over-flight of mail.

In contrast to objections by all four carriers to the originally proposed reduction to 32 cents per ton-mile, it now appears probable some of the lines involved will not oppose the 45-cent rate. This seems especially true of AA in view of its recent proposal that the board reduce its system mail rate to this figure and terminate the proceeding now in progress (Aviation News, July 8).

Deadlines—The times are given

10 days in which to file objections and 20 days in which to file written answers and supporting documents if notice of objection is made.

DC-4 Deliveries Seen In 90 Days

Douglas continues plans to accelerate delivery of C-97, ATA-ATC partly held.

With commercial aircraft certification tests on the C-94 near completion, Douglas Aircraft last week was conveying the airlines to determine their need for the four-engine DC-4, its commercial counterpart with a possibility that delivery might start in 90 days.

Repairs were slow in coming; the first was from a carrier not ready to place an order.

Outback Effect—Douglas' Army order for the C-94 is being out back, and only 187 of the ships will be on order after this month. In four or five months these will have been shipped.

The company has some surplus conversions from an Army contract that was canceled, and is hopeful that some of the ships may be delivered commercially in another three months.

This was a more optimistic view than that taken earlier by Lt. Gen. Harold L. George, commanding general of the Air Transport Command, who, at a meeting with Air Transport Association's board of directors several days before the war ended, estimated that earliest

Detroit Dickerin

Spokesmen for airlines serving Detroit were confident last week, in the face of a campaign for selection of Wayne County Airport as the site for the city's principal post-war airport, that the recommendations favored by the carriers and Detroit's Citizens Council still will be the one chosen.

The Warrenton Island, Conn. Association was conducting a vigorous campaign in behalf of the Wayne county spot—four-fifths of the money is part of Detroit—by advertising and mail, but spokesmen of the northwest spot pointed out that about 83 percent of the money for the latter is available and the city is preparing the legal foundation for consideration of the necessary bond.

Confession—One source commented that the situation was probably more complex than that involved in selection of a port for any other major city.

delivery of four-engine equipment to the domestic airlines could be expected late next spring.

Personnel Prospect — Personnel and equipment problems were discussed extensively at the meeting, with what airline sources described as a generally good outlook. General George said of the C-117, passenger version of the DC-3 being produced for ATC at Douglas' Oklahoma City plant, that only very limited modifications could be made on the production line. He believed the supply of nonstandard spare parts for the ship was adequate.

An estimate was requested on the number of former airline captains who might be returned to domestic service, but this was unable to give although he assumed the ATA that the Army would release every man possible.

West Coast tests of the C-94 by the Civil Aeronautics Administration started in mid-July with only a few hours of flight tests remaining. These were to be made after installation of dump valves and integral wing tanks.

Lessons — At Mesa, a group of airline pilots, including some who had flown nothing less than a DC-3, were taking turns behind the wheel of Boeing's big C-97, the four-engine engine version of the Stratoliner, at Seattle. Rapidly at the institution, the Army made the ship available to the airline pilots for 35 flying hours. About a dozen pilots were

on hand, at invitation of ATA and the Air Line Pilots Association. Their particular interest lay in the plane's landing speed.

Obtaining of the present high stalling speed in the landing configuration is proposed in a new version of the Civil Air Regulation dealing with airworthiness requirements, and the certification has been made that certification, at least reduction, of the restriction is necessary if some new planes, including the C-97, are to be economically in commercial operation.

Converted B-23's Placed Under SPB

Increased popularity at executive transport brings sales shift. C-47's seen in long supply soon.

Increasing popularity of Douglas B-23 type planes for executive transport conversion has resulted in their shift from open sale to allocation by Surplus Property Board.

Some of these ships, medium bombers extensively converted by the Army to transport use before they were declared surplus, were allocated to General Motors division at the time of SPB's 19th allocation of surplus transport planes earlier this month. Sales are being made at \$25,000.

Prior Purchases—Prior to their allocation status, seven had been bought by Pan American Airways for pilot training and other tasks, and two were purchased by Howard Hughes.

Fourteen DC-3 types and two airline version of the C-49 Lockheed Lodestar went to U. S. airlines in the 15th allocation. Of the DC-3s, three each went to American, TWA and United, two each to Northwest and Pan American, and one to Eastern. The Lockheed was allocated to the Republic Oil Refining Co., and Warren Petroleum Corp. Of DC-3 types U. S. lines have received 117 and foreign lines 60.

The agency anticipates that C-47s, Army cargo version of the DC-3, will come into long supply in the next few months. It expects to be able to meet all airline requirements for this type ship well before the end of the year. Since they will be suitable for use only in cargo service in this country, the immediate demand is not expected to be great. Twenty-two of them are reported to have been

ATA Changes

Two changes on Air Transport Association's board of directors have occurred, both resulting in membership by airline board changes.

The place vacated by resignation of Jack Fips, president of TWA, was filled immediately by election of T. S. Wilson, chairman of TWA's board of directors. C. R. Smith, chairman of the board of American Airlines, replaces O. M. Baker, AA vice-president, as ATA board member.

service. Some of them already are in surplus, though not turned over to SPB for distribution. Some already have been accepted by the lines contemplating their use. Reconversion is expected to be an extremely serious problem, and one airline anticipates it will be possible only to use them for freight service.

Any commercial use as regular scheduled service, however, will be contingent on CAA certification, following airworthiness tests now being completed at the Douglas plant at Santa Monica.

NAL Reports Record Revenue Mile Year

National Airlines reports that in July of this year it flew more revenue miles, revenue passenger miles, and carried more revenue passengers than in any previous month in its 38-year history.

Highest load factor was 85.62 percent on New York to Jacksonville flight; Jacksonville to New York was second with 85.01 percent, Jacksonville to New Orleans third with 82.84 percent, and Tampa to Jacksonville fourth with 82.14 percent.



JEOP TIEDOWN IN MODEL 39

Method by which five Willys Jeeps were tied down on a recent flight from Detroit to California in the Consolidated Valiant Model 39, now being used as an experimental cargo plane by American Airlines, is shown here. Ryess Skylander rod and lock equipment was used.



STUDY DELTA AIR LINES OPERATION:

Two Latin American airline employees converse the flight control board of Delta's operations office at the Atlanta Airport. (Below) Torres, Jr. (standing) has been assigned by Transperes Aereos Centro Americanos, Merida, Mexico, as assistant manager. Carlos Novales has been chief ticket agent of Transperes Aereos Centro Americanos in San Jose, Costa Rica. They are receiving training through the International Training Administration and will serve as Delta employees for 10 months before returning to their home airlines.

Peace Adds Airline Burdens As Troop Carrying Plan Grows

VJ-Day seen ushering in heavier task in demobilization than faced by carriers in connection with redeployment; details uncertain; West-East traffic headed for most definite increase.

By MERLIN MICKEL

The end of the war with Japan, instead of lightening the part the airlines are soon to play in the movement of troops, can be expected to bring them a heavier task in the demobilization plan than they faced in connection with redeployment.

With the transcontinental troop movement project to start Aug. 27, under which the five operators assigned to it will make more than 26 flights daily under Army contract, the feeling persists both with the Army and the lines themselves that the job may be greater than originally contemplated.

More 'Lift'—War Department officials dealing with the situation say that the end of the war "simply requires that the air left demobilized be expanded." Possibilities are being studied for air transportation in addition to that originally planned to carry 1,300 men a month across the nation in the redeployment program.

While no increase is anticipated in east to west movement, one is certain in the opposite direction. A

spokesman for the airlines said they expect more troops to be moved now than ever. He explained that troops being discharged must be returned to distribution centers within six hours of their landing, a factor that will "change the picture and make it far from what it was before VJ-Day."

Part as, the picture has been changing from day to day, and beyond the likelihood that the airlines probably will be called on to do more than stand under the original redeployment program, little is certain, especially as to details.

Pilot Aid—Generally the airlines are beginning to see daylight on the personnel situation. The Army is releasing pilots on concentration that they go to work on the transcontinental project. A "dubbed" "household project" in the War Department... and is helping in the recruitment of mechanics, though not making any available for that specific purpose, it is pointed out.

The pilots are being released to the line from which they went into service, placed on that line's payroll, then loaned to one of the carriers—American Airlines, Northwest Airlines, Pan American Airways, Transcontinental & Western Air, or United Air Lines—in the transcontinental project. These in turn reimburse the airline from which the pilot is obtained.

After the project is completed, if he remains on inactive Army status, the pilot goes back to his original employer. The arrangement, being worked out by the airlines and the Air Transport Association, is expected to prevent the lines participating in the troop movement from being in an unduly advantageous position as to pilot personnel when the project has been completed.

Estimates are that the pilots needed to operate the C-54s allocated to the job by the Army will run about nine per plane at a plane utilization figure of 11 flight hours per day. With 17 planes being allocated to each of the five as

the project... 15 is operate and two for training... the problem is a serious one, and the airlines are ready to have as many as pilots as they have facilities to train.

Mechanics—ATA doubts that the loan arrangement on pilots need apply to mechanics. Here, a situation that was desperate when the redeployment program was announced, is improving due to several factors, among them the Army's cooperation in recruitment, the fact that many mechanics in the service are being discharged on points, and those already with the airlines have a much better chance for deferment than was the case while the war was still going on.

Between 800 and 700 additional skilled men, ATA says, must be added to the present mechanical department staffs of the participating airlines to maintain the planes for use on transcontinental project.

ATA To Publicize Control Stand

A "grass roots" educational movement directed against Federal regulation of interstate common carriers by air was decided on by the State Relations Committee of Air Transport Association in a recent meeting at Hershey, Pa.

To further the plan, the country was divided into six regions in each of which the director of the division will appoint a state director from the airlines to explain the stand to chambers of commerce, trade associations, and similar groups.

The Men—Heads of the six divisions are O. M. Mason, American Airlines, northeastern division; S. Snyder, Eastern Airlines, New York division; R. W. Smith, Air Lines, southeastern; Russell C. White, TWA, southwestern; Robert M. Averill, PCA, north central; A. E. Ploas, Northwest Airlines, northwestern; and H. H. Ranshaw, United Air Lines, western.

The state relations group, of which Averill is chairman, also discussed at its three-day meeting resolutions by Representative Leo and Senator McFarland, calling for an investigation of the various forms of transportation along lines that seem as a move precluding an attempt at integration. Definite action, however, awaits further consideration.

North Atlantic Case Reopening Denied

CAB turns down five petitions for reconsideration; report overrules validity of all arguments.

The Civil Aeronautics Board refused last week to reopen the North Atlantic route case in a series, three point order denying five petitions for reconsideration.

Less than two pages long, the order, as had been expected, denied petitions for reargument, rehearing and reconsideration filed by Pan American Airways, Pennsylvania Air Lines, Eastern Air Lines, McCormack, Lusk, and U. S. Midland Air Line, and a petition for reargument or reconsideration by Northwest Airlines.

Reopening Denied—Pan American's claims of injustice in the route awards were dismissed by the board as being primarily opinions at variance with the board's conclusions, and raising no new issues.

CAB also found, as basis for its denial, that:

Certain allegations concerning legal adequacy of notice and hearing presented no questions of law previously put to the board on brief and argument and considered in its opinion.

Pan American's contention concerning the supposed injustice of the board in assigning it (PAA) to an alternative route position among U. S. carriers serving Europe relate only to the board's discretion, and in absence of allegations that the board's findings are not supported by the record, do not constitute valid basis for reargument.

Allegations in the petitions as to correctness of the conclusions reached by the board "in the exercise of its discretion" do not warrant consideration.

The board's decision in the North Atlantic case, granting new service to American Airlines System, and Transcontinental & Western Air, and extensions to Pan American Airways, was approved by the President July 9, PAA, in asking reconsideration, claimed the board had shown "partiality" in favoring the TWA and "discrimination" to American, at Pan American's expense.

Transcontinental answered that PAA's petition actually sided the board to disregard the very conditions Pan American had sought to be advocated during proceedings



N. Y. FEEDERLINE STARTS:

A new interstate feederline, Dickinson Airways, is operating between Bangorville, N. Y., and New York City. A daily flight is made from Bangorville, using a Waco. A twin-engine Cessna 441 is to be added later for more frequent service. Picture shows owner-pilot C. B. Dickinson (second from left), former AAF pilot, being congratulated by Lark officials who went on the first flight (left to right, they are William M. Shaw, traffic manager; Philip S. Higgins, vice-president; and Edward H. Allen, purchasing manager).

in the case, and quoted Pan American's own brief to show that "facts of record establish the exact reverse of what Pan American contends."

Actually, said TWA, the figures in Pan American's own brief showed that if trans-Atlantic travel within the United States the CAB-established routes, Pan American was favored over TWA and the latter came out in the poorest position of any of the three lines certified.

Proof Claimed—TWA supported its contention with this table:

Statistics of North Atlantic Traffic in January of 1944			
Route Served by CAB Line	Days per Week	PAA Passengers	Passengers per Week
Atlantic	45.75 percent	40,000	40,000
Pan American	25.00 percent	11,000	11,000
TWA	29.25 percent	25,000	25,000

Provisional Air Staff Requirements Seen

The secretariat of the new Provisional International Civil Aviation Organization will require the services of an undetermined number of persons skilled in certain aviation specialties.

The organization was provided for in the Interim Agreement on International Civil Aviation, con-

cluded at the Chicago Air Conference of 1944.

No Listing—The State Department said it was still impossible to announce a definite list of available positions on the secretariat, or of the salaries to be paid, until the cabinet has met and taken action.

It appears, however, that persons will be required who are skilled in the several technical specialties of aircraft workmanship, qualifications and licensing of operating personnel, facilities and organization of air routes, including requirements with respect to airports, air navigation aids, air traffic control, radio communications and signals, and meteorology, aerostatics, maps and charts, air navigation notices and other airway publications.

There will probably also be a need for personnel qualified in the analysis of the economics of air transportation, preparation of accounting studies relating to this subject, preparation and coordination of statistical material, law of air transportation, considerations relating to the requirements of the customs, immigration, quarantine and other governmental services, and in the operational phases of air transport. In addition, the secretariat probably will need certain administrative personnel.

Tomorrow's Air Force

CAA House Cleaning

THE BEST AIR FORCE appears to be in line for consultations on recognition a few days after war's end of a radically-changed concept of air power. In his first seven conferences following the Japanese surrender, General of the Army H. H. Arnold declared flatly the "past is dead . . . I'm only interested in the future." And the future he held out was one that bore little resemblance to previous statements from AAF or elsewhere on the nature of America's post-war air force.

Gen. Arnold frankly admitted he did not have the faintest idea of what that air force would be, and implied that even the words "air force" might not describe the air weapon of the future. The development of weapons, he said, was the key to America's future.

What kinds of weapons? "A defense machine built around the most effective and efficient weapons that can be created and used with the least expense."

These would include new and much more efficient and effective V-A's and V-B's, with weapons able to be guided or perhaps even powered by light and heat. The air bombardment weapon of the future would not have a human crew.

The method of attaining those ends, as outlined by General Arnold, also provokes optimism that the AAF is not content to rest on past laurels. First there must be a nation-wide system of research and development, with NACA and educational institutions doing basic research, and the industry and civil agencies concerned with applying research.

Second would be establishment within the AAF of some system of taking young talents from colleges and universities and putting them in the air forces, promoting them systematically to positions of authority.

Particularly calculated to inspire confidence in the AAF's vision was Gen. Arnold's reply to a question relative to the determination of authority in the development of guided missiles—whether that would be a task for the air force, or for Army ordnance. He is not interested in that question, the General replied. Rather, the important thing is to develop weapons. All agencies should work on the problem, if necessary.

The very vagueness of Gen. Arnold's thoughts on the character and composition of the post-war air force is in itself encouraging. It indicates a new and hitherto missing flexibility of mind and outlook that is well in keeping with the flexibility of the air weapon itself, despite the fact that some aviation observers will view this statement as a bid for further favor by those who seek some kind of consolidation of Army and Navy aviation.

While the AAF is the immediate future will continue development and use of conventional air weapons—such as a heavy bomber and with greater range than the B-29—that does not detract from the other statements of the AAF's topmost officer. The General has never made a more important pronouncement in all of his years of press conferences. They indicate that if our AAF has sufficient authority, the U. S. will never again be caught short.

AFTER WEEKS OF INVESTIGATION by a Joint Committee-CAA committee, and a general tour of most of the regions, Administrator T. F. Wright has added for the investigation of a number of CAA personnel, most of them in the New York and Pittsburgh areas. Virtually all of the charges made by the News, other aviation magazines, and pilot groups such as UPMA, against the Old Guard in CAA are being substantiated in the first few days that the story of the New York investigation has come to light.

Certain personnel are accused of improper issuance of airman's certificates, discriminating in enforcement of regulations, irregularities in conducting examinations with instances of "collusion with participants" and not only failure to report cheating but actual cheating by CAA men of innocent students on examination papers. Lack of uniformity in enforcement included charges of accepting gratuities. Bernard L. Glafire, an executive assistant to Secretary Wallace, said this investigation, which was ordered some weeks ago by Mr. Wright, disclosed "one of the worst abuses I've ever seen."

At least three of the individuals whose resignations are being requested plan to fight back, so that additional details of irregularities by CAA personnel will probably come to light. It is important to note that Administrator Wright called to a number of the persons involved before the investigation was begun by the special committee, of which he was not a member. He suggested at that time that if any wished to do so they should then request any transfers or submit their resignations. All refused. He also told them that he would be obligated to follow the recommendations of the special committee after the investigation. This he has done to the letter.

Following up the inquiry, he will dispatch shortly to all regions instructions to:

- 1—Check examinations more frequently to detect unusual distribution of passes and to detect more fully subsequent of all regulations.
- 2—Prohibit any CAA employee from having study on loan or "proprietary interest" in any civil aviation enterprise whose business is vitally affected by CAA.
- 3—Remind to all employees that acceptance of gratuities and gifts of material value endangers their continued employment. High national administrators should emphasize in responsibility to be aware of such conditions in their areas.
- 4—Prohibit CAA employee from engaging in the business of purveying or selling airplanes of aircraft and equipment.
- 5—Re-emphasize that no official airplane or motor cars may be used except on official business.
- 6—Inform all inspectors that they are to be subject to action if they are found to be corrupt.

These are serious steps forward by the Administration. The sector the whole early years of CAA field irregularities comes fully into the open the sooner the aviation public will get a square deal from the entire CAA staff. Many employees, of course, have done an excellent job. Many of CAA's shortcomings have been due to Washington dramatic executives. The News feels that until Mr. Wright dismisses some of these Old Guard assistant administrators and one or two other of his executives, he will not win 100 percent cooperation with his policies, even after nationwide investigations. But the latest action is an excellent start on CAA's long needed housecleaning.

ROBERT H. WOOD

Presenting

THOROUGHbred—j.g.

THE TG-16 FIXED

STATION TRANSMITTER

Traditional Bendix quality in
the low power field—the latest addition
to the Bendix line of ground
station equipment



A worthy companion to higher power Bendix equipment, the TG-16 transmitter is designed to the most exacting standards of performance that have made Bendix Radio equipment "STANDARD FOR THE AVIATION INDUSTRY." Characterized by unsurpassed design, conservative design, and low power consumption, it is ideally suited for conditions of secondary airfield where simple, reliable operation is a necessity.

The TG-16 is a one-type, multi-channel transmitter for a variety of communications and point-to-point operation at

high frequency and V.H.F. A low frequency RF channel for control tower or automatic radio beacon service can be supplied where required. The output of the transmitter is 100 watts in V.H.F. At lower frequencies it supplies 150 watts for radio telegraph and 100 watts for radio telephony. Simple remote control facilities are available for distances up to 1000 feet.

For further information on the new Bendix TG-16 Fixed Station Transmitter, write for your copy of our catalog.

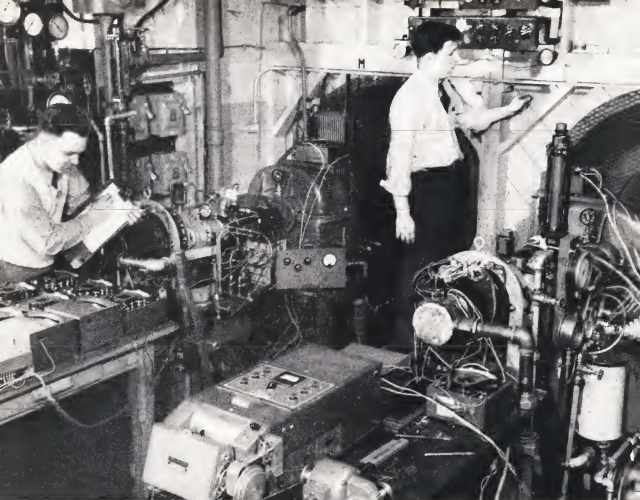
Write to: BENDIX ELECTRIC COMPANY, 1000 N. 10TH ST., ANN ARBOR, MICH.

Bendix Radio DIVISION

BALTIMORE 4 • INGLEWOOD • MARYLAND

STANDARD FOR THE AVIATION INDUSTRY





Original test setup for demonstration to the Army Air Force

IT'S HERE! A-C FOR AIRCRAFT

... offering a drastic weight reduction, less maintenance, better performance at high altitudes, more safety features

ONLY a year ago, many competent engineers were sure it was impossible to parallel main engine-driven alternators to generate a-c power for aircraft. Technical difficulties arising from the varying speeds of the main engines were too great. Yet, last spring, G-E engineers tightened the last bolt, fastened the last wire, started the two aircraft engines in this laboratory—and had proof that such a system is practical.

The story of how it was done belongs in the pages of American aviation history. It's the story of engineering at its best—of the co-operation of highly skilled men from Sundstrand Machine Tool Company and General Electric, who combined their knowledge of hydraulics and electricity to achieve a practical a-c power system. You who have seen it on test know that before long this system will be ready for flight—that it measures up to the plans for it—that it's here at last! *General Electric Company, Schenectady 5, N. Y.*



**PRECISION PRODUCTS
AND
ENGINEERED SYSTEMS
FOR AIRCRAFT**

BUY WAR BONDS as your stake
in America's future

GENERAL  ELECTRIC

674-42-8070